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In Search of Environmental Sociology

Census 1991
Literacy in Tamil Nadu : Some Progress But a Long Way To Go

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EDITORIAL - SOME HIGHLIGHTS

I. General Economic Scene

State

Tamil Nadu Interim budget 1991-92 Vote on Account

Following from the decision to present an interim budget calling for a vote on account for the Union budget, as will be explained later, the union government, because the state is under President's rule, presented to Parliament an interim budget for Tamil Nadu for 1991-92 and asked for a vote on account for 6 months (April—September 1991). The main features of this interim budget are: 1) No new taxes are imposed, the 1990-91 taxes being continued in 1991-92. 2) The revenue receipts show an increase of Rs.609.38 crores over the 1990-91 revised estimates, including an increase of Rs.479/79 crores as higher income on taxes (due to buoyancy) and non tax receipts. 3) The state's share of union taxes, duties and grants is higher by 129.58 crores over the revised estimates for 1991-92. 4) The expenditure on revenue account is Rs.5955.03 crores. 5) The interim budget shows an uncovered deficit of Rs.307.31 crores for 1991-92 against Rs.199.10 crores as the revised deficit for 1990-91, for 1990-91, revised from the budgeted Rs.510.10 crores. 6) The funds requirement for the first 6 moths of 1991-92 are Rs. 3959.24 crores. For reasons to be referred to later under the union budget. Parliament approved unanimously the interim budget for 1991-92 for Tamil Nadu. The vote on account for 6 months is Rs.3959.54 crores, comprising Rs.3092.85 crores on revenue and Rs. 868.80 crores on capital account. Also supplementary demands for grants for Rs.1151.31 crores were presented and approved. The revised estimates for 1990-91 shows tax and non tax incomes at Rs.3418.30 crores, up by Rs.360.96 crores over the budget estimates, due to ARM from commercial tax and state excise. The revised expenditure for 1990-91 also increased

by Rs.452.23 crores to Rs.5266.32 crores. But this increase is less than the increase in income, the revenue deficit in the budget estimate of Rs. 416.03 crores is reduced to Rs.290.67 crores. The above presentation shows that an improved financial position in the state for 1990-91 with the increase in income outpacing the increase in expenditure due to better collection and the big increase in excise and the larger devolution from the union. Thus for 1991-92 the stage is set for a good final budget by the new government. The Annual Plan for 1991-92 is higher at Rs.1600 crores against, Rs.1488 crores for 1990-91, with a right emphasis on power (Rs.525 crores), water supply (Rs.195 crores) and agriculture and allied services (Rs.184 crores). The power sector needs to be intensified using thermal including lignite and gas as feedstock more adequately. In April, the government announced increased dearness allowance to its employees effective from January 1991. The allowance ranges from Rs. 60 to Rs. 250 a month. The DA arrears for January to March are to be paid in a phased manner.

1991 census : Tamil Nadu

The provisional figures of the 1991 census shows Tamil Nadu's population at the sunrise of March 1, 1991 was 5,56,38,316 up from 4,84,08,077 ten years ago — an increase of 72,30,241 with 2,82,17,947 males and 2,74,20,371 females. Tamil Nadu continues to be the seventh most populous state. The decadal growth for the state has declined from 17.50 per cent in 1971-81 to 14.94 per cent in 1981-91, the second lowest after Kerala which had a growth rate of 13.98 per cent.

The state has also recorded a drop in the birth rate from 28 per 1000 population in 1981 to 23.1 per 1000 in 1989, even as the death rate fell from 11.8 to 8.6 in the same period, compiled under the sample registration system. The density in population here is 428 per sq km against the national average of 267 per sq km. The sex ratio shows a declining trend with the number of females for every 1000 males falling to 972 from 977 in 1981. Some of the southern districts have, however, a higher sex ratio ; Chidambaranar 1,047 females for every 1000 males, Tirunelveli-Kattabomman 1036, Pasumpon Thevar Thirumagan 1.029, Ramanathapuram 1020 and Pudukottai 1006. The lowest sex ratio is in Coimbatore district, 910, Madras city has 930 and Salem 932.

South Arcot is the most populous district with 48,70,871 people accounting for 8.75 per cent of the state's population. Chengai—Anna ranks second with 8.31 per cent, Thanjavur third with 8.14 per cent, Tiruchi fourth with 7.39 per cent and Salem fifth with 7.03 per cent. Nilgiris remains the least populated district with 7,04,827 people, making for 1.27 per cent and Pasumpon Thevar Thirumagan comes next with 10,74,989 or 1.93 per cent of the state population. There are 25 cities and urban agglomerations with a population of 1 lakh and above. The Madras urban agglomeration, which is the biggest urban complex and includes 56 contiguous muncipalities, townships and panchayats other than the core city of Madras, has registered a population of 53,61,468 an increase of 24.99 per cent.

State Planning Commission

In March some working group of the Commission on water, science & techno-

logy met and reviewed the progress of the schemes underway at the start of the first year of the VIII Plan. In continuation of the reorganisation of the commission reported in the last issue, Mr. Guhan's resignation of the membership of the Commissison was accepted. Mr. Rajendran who was the Chief Secretary and later Chairman of the Tamil Nadu State Electricity Board, assumed office at the end of March as Chairman of the Commission in succession to the past Chief Minister, Mr. Karunanidhi. When the VIII Plan is finalised by the Union Planning Commission, as referred to later, the state's Eighth Plan will be reviewed by the State Commission and the necessary adjustments if any will be made. There was a meeting of the commission in April when a plan for stepping up rice production was reviewed and referred to the Agriculture Working Group, a decision to establish an Agricultural Policy Planning Cell was taken and the proposal was approved for the commission in cooperation with the Tamil Nadu Board of Continuing Education to call a meeting of the Vice Chancellors and the Principals of autonomous colleges in the state to Study the 2 models in operation where adult literacy and national regeneration activities are made part of the curriculum.

Climate and Prices

March and April were dry months, with the temperature rising to 36-40, leaving behind the cool weather prevalent in February. The heat has worsened the drinking water problem in the state and several districts have been declared dry districts and emergency relief action taken. A crash programme to improve drinking water supply in these districts has been taken up with an allotment of Rs. 40 crores. The works taken up include renovation and restoration of tanks and lakes and other existing sources of water. Repairs and maintenance of hand pumps is under way. Rs. 10 crores are being spent in drought affected Dharmapuri, Salem, Dindigul Quaide-e-Milleth, Periyar, Tiruchirapalli, Pudukottai, Coimbatore, Thiruvannamalai Sambuvarayar, North Arcot-Ambedkar, Ramanathapuram and South Arcot, involving the sinking of 5000 bore wells, 4 crores for construction of open wells, deepening of wells, flushing of bore wells and provision of feedlines, and Rs. 1 crore for water supply through lorries. One of the problems faced by this emergency programme, based on TWAD's scientific guidelines and data developed by it on ground water potential in these dry areas is that the block and panchayats do not have trained manpower to take up sinking of borewells on the basis of the hydro geological studies or even proper maintenance of these assets resulting in failures, as shown in repeated expenditures in the same locality, indiscriminate sinking of borewells leading to over exploitation of the limited ground water potential which is aggravated by the sub normal rainfall in 10 out of the past 20 years resulting in poor recharge of ground water. In one district (Coimbatore), the study shows that the water table is decreasing by 25.3 mm every year. Hence along with the material help given, it is necessary to train personnel-atleast technicians to optimise and improve water supply in these areas. Where the personnel have been trained to use scientific methods in identifying feasible areas, the failure rate in the working of bore wells have been decreasing by 15.2 per cent in 1981-82 to 3.3 per cent today, replacing also the random sinking of borewells. In April

some of the southern districts, Salem, Coimbatore, Dindigul received summer rains. On prices, CSO's monthly abstract of statistics for September and that for October, November and December 1990 shows that: i) the index number of consumer prices for industrial workers has climbed steadily by 3 points (over 2 per cent) in June by a further 3 points (2 per cent) in July and remaining there for August with food prices going up by 6 points and clothing by 8 points between May and July: ii) the index number of consumer prices for agricultural workers rising by 1 point each in June and July and sharply by 15 points in August and remaining there in September: and iii) the consumer price index for urban non manual employees also rising by 2 points in May, 1 point in June, 2 points in July and 1 point each in August, September and October in Madras, and a lower 1-2 points rise in Coimbatore and Madurai and 3 points for Salem and Tiruchirapalli. These rises are taking place despite the control mechanism put in place by government through higher releases of the affected commodities, free movement and assured supply. For this purpose government announces that it will use the PDS and cooperatives to control prices of consumer goods.

Power

In March, the state government increased the power cut on HT industries on both energy and demand requirements to 30 per cent from 20 per cent on demand requirements and 10 per cent on energy. This was continued in April, when there was no increase in the power cut but continued load shedding. The reason given is a double one - the difficult coal availability position in the state and to a lesser extent because of the reduced generation from union sector units of Kalpakkam and Ramagundam. The coal shortage leading to the power cut is really scandalous and shows poor planning of the coal linkage. Mettur has only 1 day's supply, Tuticorin 2 days and Ennore 4 days, reduced to two and half days by mid April and later reduced to 0 and 1 day stock. There is need to revamp this whole coal linkage systems and ensure adequate transport by rail and sea as coal has now to be moved from West Bengal, Bihar and Orissa. The Tamil Nadu Electricity Board has successfully undertaken ad hoc emergency arrangements in March and April to meet the daily demand. While the Board's management must be congratulated for this successful ad hoc management from day to day including the "supervising control and data acquisition system" under which the centralised control system is used to keep interruptions in power supply to the minimum and to ensure quick restoration of supply, what is needed is a change over of supply under such condition as will provide alternative sources of supplies. Another short term remedy is to reduce the line losses amounting to 18.4 per cent or 3,600 million units annually (this is equal to a 600 MW thermal station. Hence during the VIII Plan there should be specific provision for increasing the investment in transmission and distribution. In mid March there was a complete power blackout for several hours and disruption of power supply to trains, factories, houses etc. For a greater part of the day due to a 400 KV line tripping at Nagarjunasagar resulting in low frequency conditions in Tamil Nadu grid and the tripping as a cascading effect of the machine in Mettur, Tuticorin, Neyveli and Karnataka. This was really like an Act of God and cannot be provided for except through proper

maintenance and management. Some positive development during the month included the commissioning of the first 10 MW unit of the Kadamparai pumped storage hydel station which had to be shut down because of a fire in the station in October last. Also on March 30, the fourth 210 MW unit of the second Neyveli power plant was commissioned. The fourth unit (210) of Tuticorin was commissioned on April 1. This provided some relief. Another such short term relief is installation of transformers and conductors for small scale units for which SIDBI should grant a small increase in loan to the Board. At the end of the month, 3 emergency shipments of coal arrived raising the ground stock in the ports to 31,000 tonnes. The railway was readying itself to move this stock to the plants. In addition to these short term relief measures, there should be a long term restructuration of the coal supply linkages to the various thermal plants in the state. In April the Board reports a 13.4 per cent increase in power generation, exceeding its 1990-91 target for energising pumpsets and working according to schedule on the Koodankulam Atomic Power project. (See Vol XIX p2). An important long term relief project is the 600 MW gas based project at Tharagombadi with gas from the off shore well 25 kms east of Cuddalore. This will make the state almost self sufficient in power.

At the national level, power supply was normal except in the states facing shortages - Karnataka, AP, UP and West Bengal. Here there are two long term issues facing the power situation. One is the Union Planning Commissions study of increasing capacities during the VIII Plan by 6000 MW above the target of 28,544 MW target. Special attention should be given to the hydel sector which though involving a longer gestation period is less costly than thermal or nuclear power generation It is in this connection that the proposal to permit the private sector entry into power generation needs to be pursued and acted upon speedily. There are problems that the private sector faces in the matter of raising the necessary investment resources in addition to what will be available from public sector financial institutions, the cost of supplying power compared to the states power Board's cost and prices etc. But as the 4 private sector plants, mainly in Maharastra, show all these problems can be met and overcome. What is needed is a decision. Ofcourse no decision can be made till a new government is in place. But the preparatory work should be completed now before the new goverment is installed. If the facility of purchasing power generating sets free of excise duty is also extended to the industrial units, it will relieve the pressure on the national grid. Further, the World Bank has set forth a report for the development of micro-mini hydel projects on which it will invest Rs. 1.50 crore to generate 50MW. The Bank is also looking at alternate energy sources for the country-wind energy, cogeneration and other renewable energy sources. This is important on which the new government must make an early decision to follow up the Rs. 20 crores for 125 projects disbursed so far by the Indian Renewable Development Agency (IREDA). In 1990-91, Rs. 26 crores has been sanctioned for over 100 projects covering several renewable energy projects - solar, thermal and photo voltaic system, wind and dio energy units, high efficient wood burning systems, manufacture of solar fuels from municipal and agricultural wastes, battery powered vehicles, wind farms

generating electricity and recovery of methane from distillery and industrial effluents. Third; there is need for a national fuel policy which will meet the problem of the states which are far away from the collieries and for the supply of quality coal at lower costs of transportation and storage. The National policy should set forth and coordinate power generation for thermal, hydel and through gas for which a gas grid needs to be planned and constructed to meet the needs of power deficit states and regions. The policy should also set forth a fuel conservation policy, on which the country has yet to make a start. Recent studies and confirmed experiences have opened up a new energy source - 10 MW biomass based power station at the taluk level which would relieve our rural energy shortage and also generate employment. Fourth, there is need to rationalise the power tariff structure. Both the rates of NTPC and NHPC as well as those of the State Electricity Boards need to be raised to make the power sector commercially viable.

Water

In addition to the emergency measures taken to meet the drinking water scarcity referred to earlier, plus the Rs. 6 crores given to districts in April to sink bore wells, the water storage position in the state is far from satisfactory. Unlike the other states where the CPWD points out that the storage in reservoirs is normal or above normal, in Tamil Nadu apart from the Aliyar reservoir where it is near normal, the storage is much below normal in four main reservoirs of lower Bhavani. Mettur, Vaigai and Parambikulam. On this, the Telugu Ganga for which the government has paid its share of Rs. 15 crores (making a total payment of Rs. 122 crores out of the state's share of Rs.252 crores) will meet only the water needs of Madras city and for this the storage position must be made adequate. Rs. 25 crores have spent to date and with the Rs. 26 crores for 1991-92, 70 per cent of the work in this state is complete. This could be an additional function of the Dam Safety Directorate created in the office of the Chief Engineers. In March there was a special release of water from Bhavanisagar to the second ayacut for one wetting to save the coconut trees and standing gingelly crop and to relieve the drinking water scarcity to some extent. Another special programme that is under way in the water area is the water shed development programme for which an outlay of Rs. 35.61 crores have been provided in the VIII Plan to cover 89,025 hectares of rainfed farming areas. Of this, during 1990-91, Rs.2.56 crores are being expended to over 6400 hectares in 12 districts.

Housing

The Tamil Nadu Housing Board has finalised an outlay of Rs. 123 crores for 1991-92 to provide 8000 houses and 15,000 improvement sites in the state. Under HUDCO's programme Rs. 190.92 crores were sanctioned to the state in 1990-91. Further under sites and services scheme 100,000 houses and related facilities (up from the target 20,000) are being provided in 5 major cities and 5 towns. This was started in 1988 and will be completed by 1994 at a cost of Rs. 246 crores. The project also trains students in batches of 25 artisans in Coimbatore and Tiruchi in construction technology as well as low cost building technology. The government has also decided that in the next 2 years all

panchayats in the state will have their own buildings. At present only 135 out of 12614 panchayat have buildings of their own. During the current year, 2000 panchayat buildings are being constructed. This programmes gives reality to the principle of decentralisation of administration and planning to the panchayat level, for without a home, the panchayat cannot carry out its devolved functions.

Transport

Shipping and Port services in the state are looking up. The Madras port has increased in 1990-91 a sizable expansion in its coal handling averaging 3.34 lakh tonnes a month (using the Poompuhar Shipping Coporation). On this basis it is planning to expand its capacity in 1991-92 to 3.5 million tonnes. Its gross cargo was 24.52 million tonnes in 1990-91. The port's plan include a new central documentation, a call point complex and modernisation of quays. Similarly Tuticorin which handled 1 million tonnes of cargo in 1990-91 is planning a Rs. 11 crore additional coal jetty to serve the thermal plant and a new cargo berth with container handling facilities. The public sector transport provided by the state's transport undertakings with a total of 13,650 buses, faces mounting costs and all round losses. There is both fuel shortage and also rise in its price. The public subsidy to the transport sector cannot be increased further. This is also a general problem faced by the state in light of financial shortages. Hence there has to be an upward revision of bus fares. It will be and must be moderate because the public transport is used by the poor and lower middle class people who are facing the effects of inflation referred to earlier. But some increase in fares is unavoidable. The level of the increase can be limited if the well to do sections of society patronised the Transport Development Finance Corporation, which can share in meeting the escalating costs of public transport. Using the ADB loan, tenders are being finalised for commencing work on the Rs. 53 crores East Coast Highway, connecting Tiruvanmiyur and Cuddalore in the first phase, as an important programme of expansion of the state's trade and commerce.

Environment

The environmental problems faced by the Nilgiris, namely destruction of forests, encroachments, pollution, landslips, tourist boom and traffic chaos demand urgent attention. The Hill Areas Conservation Authority has a massive job to save the Nilgiris to which both government and non government agencies should address themselves.

National Union Interim Budget 1991-92

As explained in the last issue of the Bulletin, the government presented to Parliament on March 4 with an interim budget for 1991-92 (for political reasons) and on that basis asked for a vote on account for a period of 4 months. The summary of the interim budget presented by the government is given below.

	1989-90 Actual Budget	1990-91 Estimates	1990-91 Revised	1991-92 Budget Estimates
1. Revised receipts	52296	57938	57381	63584
2. Tax revenue (net to centre)	38349	45294	44318	49374
3. Non tax revenue	13947	12644	13063	14210
4. Capital receipts	30018	34165	38564	36006
5. Recoveries of loans	4980	4576	6005	5608
6. Other receipts	—	—	—	2500
7. Borrowing and other liabilities	25038	29589	32559	28498
8. Total receipts(1+4)	82314	92103	95945	100190
9. Non - plan expenditure	64505	68843	76761	76907
10. On revenue account	52137	56671	60946	64304
11. On capital account	12368	12172	15815	12603
12. Plan expenditure	28401	30466	29956	33260
13. On revenue account	12071	14299	14020	17046
14. On capital account	16330	16167	15936	16214
15. Total expenditure (9+2)	92906	99309	106717	110167
16. Revenue expenditure (10+13)	64208	70970	74966	81350
17. Capital expenditure (11+14)	28698	28339	31751	28817
18. Revenue deficit (11—14)	11912	13032	17585	17766
19. Budgetary deficit (8—15)	10592	7206	10772	9977
20. Fiscal deficit (1+5+6)−15−7+19)	35630	36765	43331	38475
Increase in net RBI credit to Central Government	13813	7206	13000	9977

This interim budget shows the following features 1) For 1990-91 the revised budget shows lower receipts mainly in tax revenues, an increase in total expenditure, sending up the revenue deficit from the budgeted Rs. 13,032 crores Rs. 17,585 crores, the highest so far, the budgetary deficit from the budgeted Rs. 7206 crores to Rs. 10,772 crores, the fiscal deficit (which is 1+5+6—15+19) from the budgeted Rs. 36,795 crores to Rs. 43,331 crores and the increase in net RBI credit to the union government from the budgeted Rs. 7200 crores to Rs. 1300 crores. Here the fiscal jugglery of keeping budgetary deficit lower than the net RBI credit (by the issue of treasury bills) may be noted. 2) For 1991-92 both the estimated receipts and the estimated expenditures are higher than 1990-92, the revenue deficit higher at the highest ever Rs. 17766 crores, the budgetary deficit lower at Rs. 9977 crores, which is also shown as the net credit from RBI to the union government and the fiscal deficit lower at Rs. 38,475 crores. The one good point in the interim presentation is that the non plan expenditures is only a little higher than the 1990-91 non plan expenditure. But all data is subject to revision when the final budget is presented in May when both revenues and expenditures will be revised on the basis of the more reliable estimates and additional resource mobilisation. 3) The 1990-92 interim budget is based on all taxes being in same as in 1990-91 (income tax, customs and excise and continuing of existing rates of auxiliary duties of custom and special duties of excise). 4) The major subsidies on food, fertiliser and exports are reduced marginally from Rs. 9550 crores in 1990-91 to Rs.8616 crores in 1991-92 — food subsidy Rs. 2450 crores to Rs. 1800 crores' fertiliser subsidy from Rs. 3600 crores to Rs. 3300 crores and export subsidy from Rs. 2700 crores to Rs. 2316 crores (atleast the inexorable increase in subsidies has been halted) and it remains to be seen whether the farm lobby will allow this marginal reduction in future subsidy to stand in the final budget. 5) The defence outlay in 1991-92 is some 7 per cent higher at Rs. 16,850 crores than the 1990-91 revised outlay and given the inflation rate of 12 per cent represents a marginal decrease in the real outay, probably due to the insistent demand for its review and reduction. 6) The 1991-92 budget proposes the setting up of Bharat Bachal Bank to which the National Savings Scheme is proposed to be transferred, which will reduce the share of small savings of the states at Rs. 4500 crores against 1990-91's Rs. 6770 crores in the revised estimates. 7) It proposes also to disinvest upto 20 per cent of its equity in selected public sector undertakings in favour of mutual funds and financial or investment institutions in the public sector which will yield the exchequer Rs. 2800 crores in 1991-92. If shedding the equity is of loss making public sector units, it should be welcomed 8) In view of the fact that the fiscal deficit for 1991-92 is proposed to be reduced from 8.59 per cent to 6.5 per, cent as noted in the budget summary, all ministries and public sector units have been asked not to take up any new scheme during this period and to observe the strictest economy. 9) The Union Plan outlay has been raised by 11 per cent at Rs 42478 crores and the states plan at Rs. 29300 crores, with the budget support to the Union Plan outlay at Rs. 18,550 crores and to the States Plan at Rs. 14,710 crores. 11) Market borrowing is reduced from Rs 8000 crores in 1990-91 to Rs. 7500 crores in 1991-92 and external assistance of Rs. 4600 crores in 1991-92 against Rs. 3984 crores in 1990-91. 11) No

provision is made for additional DAs which the ministries are asked to absorb in their allotments.

The plus and minus of the interim budget are obvious. On the plus side, must be set the attempt to hold down non plan expenditure, reduce subsidies. market borrowing and hold down defence outlay. On the negative side, the budget being an interim one passes up its responsibility for making hard decisions on increased tax collections which is inevitable and places state governments and industries in a difficult position as without a firm union budget and its policy direction, their plans are thrown in some disarray. The finance minister is aware of the crisis in the economy. In his statement introducing this budget he refers to the macro economic imbalances which are large and persisting and says that the fiscal deficit had to be met by borrowing at home. The current account deficits will inevitably be financed by borrowing from abroad. The burden of servicing our internal and external debt has now become onerous and alarming. "I need hardly stress that neither, the government nor the economy can live beyond its means for long. The room to manoeuvre, to live on borrowed money or time, has been used up completly. The soft options had been exhausted". while this quite realistic comments are not really reflected in the interim budget, one can only hope that whoever presents the final budget will follow this inescapable statement of where we stand as an economy. After introducing the interim budget, the government resigned and so Parliament passed on the basis of agreement among members, without discussion the vote on account of Rs.74,277 crores for the first 4 months of 1991-92.

1990 - 91 market borrowing.

The union government announced on March 5 the last tranche of loans for 1990 - 91 at Rs. 983 crores. The 4 loans raise the total net receipts for market borrowings to Rs. 8000.28 crores as assumed in the budget.

Vote on Account of the Railway Budget for 1991 - 92

Similary Parliament passed as vote of account Rs. 7253 crores for the Railways for the period April - July 1991.

1991 Census

The decennial population growth rate dropped by a little over one per cent. ftom 24.66 in 1971 - 1981 to 23.50 in 1981 - 1991, the largest percentage decline since independence. The avarage exponential growth dipped from 2.22 per cent to 2.11 per cent in the same period. (See Vol XI pp 207 - 208). The population itself stood at 843,930,861 on March 1, 1991. The sex ratio declined to 929 females per 1000 males in 1991 from 934 per 1,000 in 1981. While the total number of literates stood at 52.11 per cent, the number of males were 63.86 per cent and females 39.42 per cent. Kerala tops with a total literate population of 90.59 per cent in 1991 up from 81.66 in 1981. Bihar is the least literate state with a total literate population of 38.54 per cent. The figure for females stood at 23.10 per cent. Rajasthan, however, had the dubious distinction of having the fewest number of literate females - 20.84 per cent. The literacy rate, crossed the 50 per cent mark for the first time in Indian history growing from 43.56 to 52.11 in 1981-91 A little over one in two Indians are now literate. Population density climbed

from 261 per sq km in 1981 to 267 in 1991. The figures stood at 117 in 1951. Apart from being adverse to women, the sex ratio has also declined over the decades. The slight improvement noticed in the 1981 Census has has not been maintained in 1991 and in fact there has been a fall of five points from 934 in 1981 to 929 in 1991 due to a) preference for male children resulting in neglect of female babies, b) the relative gap in the health conditions between males and females and certain types of mortality which are sex selective and c) lower expectation of life at birth for females in the past compared to males, part of which is due to high maternal mortality.

Urban populations continued to multiply - Greater Bombay topping the list with a population of 12.57 millions, Hyderabad 4.27 millions and Bangalore 4.11 millions. In terms of decennial growth rate of population, Kerala recorded the lowest growth rate, 13.98 in 1981-91 as compared to 19.24 in the preceding decade. The highest growth was seen in Nagaland, 56.86 in 1981-91 up from 50.05 in 1971-82. The figure of population arrived at after the Census differed by only 3.35 lakhs from the projection made by an expert committee of the planning commission. The United Nations and World Bank projections, which had projected a higher figure, adjusted the net undercount. The provisional 1991 census figures confirm that the number of people being added to India's population each year exceeds even of our more populous neighbour, China and is equal to a Japan for the decade or an Australia every year. The 0.11 per cent decline in the population growth rate over the last decade is too slight for comfort. This accords with the trend of stagnation in birth rates over the first half of the decade especially in the northern states of Uttar Pradesh, Bihar, Madhya Pradesh and Rajasthan which account for 40 per cent of the country's population now put at 843.93 million. There has been a gradual decline in the birth rate over the second half of the 1980s but these four northern states lag 20 years behind the rest of India in demographic and socio economic trends. The marginal decline in the population growth rate may also be ephemeral given the increasingly young profile of the population and the fact that the birth rate in the below 30 age group remains unacceptably high. Unless a dramatic change occurs to reverse this potential for an alarming rise in population, a significant decline in the growth rate may not be visible even by the next census.

This first set of provisional census statistics provides more reason for gloom, with the rise in literacy from 43.56 per cent to 52.11 per cent being the only redeeming feature. Gender variation in the population has worsened over the decade with the number of females falling to 929 per 1,000 males against 934 in 1981. This shows that the old social attitudes towards the girl child and women have not changed. Female infanticide, low nutritional standards and limited access to health facilities for females, relative to males and disparate literacy levels, all contribute to this appalling trend. Again, there are regional variations, with Uttar Pradesh at one end of the spectrum and Kerala at another, as more detailed statistics will show. As Kerala has reached 90.59 literacy, and any state which reached 90./· per cent literacy is declared 100 per cent literate. Kerala is being declared 100 per cent literate on April 28. Rural migration would account for most of

the increase in urban populations. While greater Bombay's rapid increase relative to Calcutta may be explained by the availability of greater opportunities for employment, there is no evidence that housing and civic amenities have kept pace. This indicates an *exponential growth of Bombay's slum population. All this* it should be noted, is a first rather quick assessment of the provisional figures.

Plan

March and April were was a period of uncertainty and guess work for the VIII Plan formulation for which a) in view of the VII Plan actual of 5.3 per cent growth, a proposal to raise the VIII Plan growth rate to 6 per cent is being contemplated, b) the resources needed for this rate would mean that it has to be increased from the original Rs. 610,000 crores to Rs. 750,000 crores (while public sector investment is proposed to be maintained at the original Rs. 250,000 crores, the balance would come from the private sector, resulting in the share of public investment being 46 per cent of the total and that of the private sector 54 per cent (in V Plan against the planned investments). 57.6 per cent by the puplic sector, the actual was 43.4 *per cent, in VI Plan* against the projected 52.9 per cent, the actual was 47.8 Per cent in VII Plan against the projected 47.8 per cent, the actual was 46 per cent, so that in the present and prospective resource crunch even the proposed 46 per cent for VIII Plan will not be attained), as a consequence energy, tourism, transportation and construction are proposed for higher private sector investment, with the public sector withdrawing from areas which can be handled by the private sector, together with selling off ailing public sector units to the private sector which will gladly purchase them because of the real estate attached to such loss making public *sector enterprises. All this would reduce the* investment by government which will be more than made up by higher private sector investment, so that the private sector can deploy its management and resources and help attain the high 6 per cent growth target, d) the unresolved dilemma is that a high growth rate target would result in lower private consumption expenditure which will hamper the goal of improving the lot of the poor, and e) the Plan document is to be prepared on *this basis and placed before the new government which will be installed in early* June, for approval by NDC and finalisation in July. The commission has also identified thrust areas which will help in both in finalising the document and maintaining continuity in the planning process: the VIII Plan thrust areas are social infrastructure such as provision of drinking water, removal of illiteracy, abolition ofscavenging, revival of wastelands, low cost sanitation and high priority for irrigation and energy development. While *all this about the* VIII *plan is informed guess work,* the data on the 1990-91 plan (the first year of the yet to be formulated VIII Plan) which is now available is encouraging in financial terms. The total outlay of the union and states is slightly higher at Rs. 65002 crores than the budgeted outlay which was Rs. 64,716.80 crores due mainly to the increased outlay by states, particularly the UTs. In the Union sector, however, there was a shortfall which means that the modest physical targets *were not achieved. This* makes the 1991-92 plan prospects rather grim with the paucity of resource, mounting non-plan expenditure and the need for executing ongoing schemes, resulting

in the 10.9 per cent nominal increase over the 1990-91 revised outlay; but with double digit inflation, there will be no real increase in plan outlay and the resource limitation has made a higher outlay impossible. Power, coal, railways and steel account for over 50 per cent of the public sector outlay. There is necessity for greater reliance on internally generated resources and borrowing and lesser budgetary support.

Prices

The rate of inflation in February continued to be accelerated by 1.2 per cent, the whole sale price showing a 1.4 per cent rise at 190.3 on February 23. In March the inflation was I per cent, the whole sale index standing at 191 2 on March 30. Inflation measured by whole sale price index with 1980-81 as base has climbed inexorably from 4.4 per cent in 1985-86 to 5.8 per cent in 1985-86, 8.2 per cent in 1987-88, moderating to 7.4 per cent in both 1988-89 and 1989-90, shooting up to 9.5 per cent in 1990-91 and 12.5 per cent in 1991-92. Money supply on the other hand has been kept down at 16.1 in 1985-86, 18.8 per cent, 15.7 per cent and 18.1 per cent in 1986 - 87, 87 - 88 and 1988 - 89, 19.9 per cent in 1989 - 90 and 17.0 and 17.5 per cent in 1990 - 91 and 91 -92 Despite this and good food harvests, the inflation which is 24.4 per cent in foodgrains for the year ending March 30, 1991) is due to 1) shortfall in some critical commodities like edible oil, 2) upward revision of public sector products prices, 3) the 10 to 17 per cent rise in agricultural prices, (wheat, bajra, ragi,maize, jower), 4) the aditional taxes in industries and 25 per cent surcharge on petroluem products, 5) fall in industrial growth 6) money supply though declining remaining high 7) prospects of higher crude prices and diesel shortage, and 8) price stickiness as far as downard movement of prices is concerned. As of March 30, the annual rate of inflation was 12 per cent. There are both inflationary and anti-inflationary forces at work. On the inflation side, the government announced an additional instalment of dearness allowance as from January 1, 1991. With this instalment those with the basic pay of Rs. 3500 will be drawing an additional 51 per cent of the basic pay. This is really a worrying factor. It is only 3 years since the last pay revision when the DA was merged with the basic pay. The only relieving feature is the decision that those with the basic pay above Rs. 3500 will not be paid in cash as the others but have the DA credited to their provident fund. The anti inflation actions is the RBIs examining ways to mop up the excess liquidity in the economy created by the inability of the oil importing companies to pay their bills in foreign exchange. Consequently these companies have accumulated a surplus of Rs. 6000 crores, a part of which is in banks for portfolio management. Indian Banks have raised \$3.5 billion in overseas credit and loans, 90 per cent of which was for ONGC and Indian Oil Corporation. Since there is no foreign exchange to repay these loans, the State Bank which was the borrower has been rolling over the loan in the international market, involving paying high interest on the fresh bankers acceptances. It is these Rs. 6000 crores which oil companies now earning under portfolio managment higher interest than that for the rolled over funds and not being depoited with the banks (but in portfolio mangement) are not subject to SLR and are both exerting an inflationary pressure and distorting RBI's

credit discipline. Further the details of the credit policy announced for the first half of 1991-92 aim at controlling inflation through containing monetary expansion involving a) short term monetary management with lending rate on credit limits of over Rs. 2 lakhs increasing by 1 per cent except for agriculture and SSI and interest rates 3 years from deposits going up 1 per cent, the ratio of incremental non food credit to deposit not to exceed 45 per cent (excluding export credit to boost exports), changing the formula of export refinances to a 2 tier one reducing the refinance levels of banks which must recoup the limits before the busy season starts and to prevent hoarding the level of credit ceilings for oil seeds and edible oils reduced from 100 to 83 per cent of the peak level : b) policies providing for structural development of the money market which will enable banks to compete effectively for bulk funds in the market and to provide additional short term avenues and interests to business, increase in the limits for issue of certificate by banks, the rationalisation of working capital limits for issue of commercial paper and above all commercial banks allowed to set up Money Market Mutual Funds to attract individual and other investments, all this will ensure both inflation control as well as allow for legitimate credit needs of industry. All this is not a bold innovative measure but is the kind of tinkering that is now needed in this part of the economy.

Budget borrowing and stock exchange

Further to the union interim budget analysed earlier, the government introduced in Parliament and had approved a third set of demands for grants amounting to Rs. 7556 crores covering 60 demands and 3 appropriations, against which Rs. 3629 crores would be matched savings and recoveries, resulting in a net outflow of Rs. 3829 crores. There was another additional set of demands for Rs. 3193.05 crores which was matched by additional receipts or savings. Only Rs. 433.15 crores was on plan expenditure and the rest non plan comprising interest (Rs. 1000 crores), farmer's debt relief (Rs. 500 crores), fertilisers subsidy (357.58 crores), Gulf evacuation expenses (Rs. 700 crores), food subsidies (Rs. 24866 crores). On market borrowings Rs. 8000.28 crores have been raised in June, August, November 1990 and January 1991. For 1991-92 the interim budget provides Rs. 7499.82 crores net in that borrowing, which is 4.37 per cent of the total internal debt of Rs. 171,634 67 crores. On the stock exchange, the political uncertainty and instability has had a depreciating effect on the value of shares. There was a sharp retreat in pivotals following the government's decision to curb imports because of the precarious foreign cxchange situation, to be referred to later. Scrips in the cash sector in particular suffered a severe set back as the March 21 quotation shows. As far as market discipline and exchange offices are concerned, the decision of the Bombay Stock Exchange to turn down the requests of 3 financial institutions to become member brokers should be noted. This was motivated by the fear that the business of the non institutional members will be affected which is true particularly in the short run against which there is a trade off to be considered, which is the financial institutions professional approach which will help both brokers and investors and reform in the exchange operations, taking trading in scripts from a family business to a professional

activitiy. This is brought home in the Securities Exchange Board of India (SEBI) introducing a system of penalty grants for merchant bankers. The penalty point is to be awarded after SEBI is convinced that these merchant bank failed in diligence and following of the rules. The deaucthorisation by SEBI means loss of business since only authorised merchant bankers can handle public issues. But both state owned investment bodies — mutual funds and speculators who were active in DSE in April, undeferred by the stagnation in the economy and the decision of term lending institutions to push up the interest trates thus pushing up the price of shares and equities during the month.

Economy

The major event in the economy was the decision on March 20 of RBI to charge a cash margin of 133 1/3 per cent for opening letter of credit (LC), for the import of raw materials under OGL against the 50 per cent margin earlier, imports by 100 per cent EOU must keep a cash margin of 50 per cent against nil cash margin earlier, imports against advance licenses and advance intermediate licenses for non consumption have also been raised from nil to 50 per cent and imports under specific licenses which had 50 per cenh cast margin have been raised to 110 per cent. These curbs cover 60 per cent of the country's total foreign exchange outgo and the other 40 per cent on government account is subject to strict scrutiny. Imports on government account estimated at Rs. 20,000 crores for the year will be staggered during April-June 1991 and payment against such imports including POL imports will be postponed. On April 23, RBI further increased the margin requirements for imports as follows: a) Import under OGL 200 per cent in place of the previous 133 1/3 per cent and b) imports under specific licenses 150 per cent in place of the earlier 110 per cent. The sale of foreign exchange in excess of Rs. 2.5 crores are to be cleared by the Exchange Control Departments, and interest rates on export credit has been raised, in addition exporters are being obliged to get back their realisations at an early date: (some $ 1 billion is estimated to be outstanding in export realisation): exporters delay repatriating their earnings because they wish to take advantage of the fall in the value of Rupees; so post shipment export credit interest rates have been hiked sharply and CCIE has announced that REP licenses will be issued to exports only after their foreign exchange remittances are received. There is no doubt that these upward charges will hit all industry — large, small and medium, because all are dependent on imports. The top ten import intensive industries which will be hard hit are 1) plastic goods (imports 66.8 cent), 2) mini steel (64.9 per cent) 3) fertiliser (50 2 per cent); 4) cable (49.4 per cent), 5) man made fibre (45.3 per cent) 6) chemicals (40.6 per cent) 7) paints (36.7 per cent), 8) pharmaceuticals (36.8 per cent), 9) dyes and dyesfuff (27.6 per cent) and 10) paper (27.0 per cent). The effect on electronic industries such as colour TV, washing machines, electronic ovens, air conditioners, VCR/VCP will be particularly visible. Infact almost all industry will be affected by this order and industrial growth will slow down by 2 to 3 per cent till the transition to a less import intensive production is made. The reason behind this drastic action is impeccable. At the time when the order was passed, the foreign exchange rese-

rves including the IMF credit of near $ 1.8 billion referred to in the last issue was Rs. 4000 crores. The monthly foreign exchange outgo is over Rs. 300 to 400 crores. Hence if the limited reserves are to be stretched out till mid June or late June when the negotiations with IMF can be concluded by the new government, there has to be a freeze on foreign exchange outgo of the kind that the RBI order represents. Infact a few days later on March 24 the government of India is reported to have approached 8 industrialised countries — US, UK, France, West Germany, Japan, Netherlands, Sweden and Belgium for help in tiding over the exchange crisis and avert rescheduling or defaulting on the debt repayments that are due. A special Fund Bank, mini meet of these countries on April 28 has promised a probable one million to meet India's serious balance of payments problems. This reported extraordinary approach to the 8 countries and the resulting promise is also based on the hope of the IMF extending the next loan of $2 billion and the World Bank $1 billion. The two agencies have turned down India's request till a) there is a government in position and a firm budget is adopted which satisfies their demands and b) there is a list of 12 demands that they have made ranging from privatising all public sector banks and term lending institutions to cutting subsidies and welfare payments and reducing priority sector lending to 10 per cent (from the current over 40 per cent) and abolishing all interest rate subsidies—which will be referred to later. Against this background, the short term approach is to a) prioritise import cuts and ensure that imports critical to the economy are allowed for a year or 6 months, b) monitor the economy for import intensive policies whose production should be cut or drastically reduced, c) dilute the restriction when exports and invisibles improve the foreign exchange kitty : but in the long run it is necessary for the country to learn to live within the foreign exchange it earns annually through exports and invisibles, which in turn requires pushing up exports and cutting imports drastically. The RBI curbs are precursor of the Kind of belt tighting that need have to be done on the foreign excnange front for the country's survival and for the economy to develop along a self reliant path, eschewing "aid" and concessional loans from bilateral and multilateral agencies. Certainly we have to get out of the facile 'natural, position that imports of the present order are essential for the economy. They are not. They must be limited to the foreign exchange that the country earns minus the debt servicing, on which alone foreign aid can be accepted. On black money, the Planning Commision's latest exercise reports that the quantum of black money at 1989-90 prices is at Rs. 3 lakhs crores, adding Rs.50,000 crores every year. On banking the RBI has allowed closure and swapping of bank branches that are incurring loss as a means of improving the viability of the banking sector. The meeting of the Economic Adivisory Committee at the end of March chaired by the Prime MInister reiterated familiar issues, including the need to identify areas for taking action. The NCAER's quarterly review of the economy of the October-December 1990 quarter shows a) double digit inflation, b) fiscal and balance of payments crisis, c) deceleration of the economy by 0.3 per cent to 4.5 per cent to 5 per cent against the VII Plan's 5.3 per cent, d) agriculture production likely to be 178.3 million tonnes e) rising buffer stocks to 18 million tonnes and f) industrial growth falling to 3.3 per cent in October and November against 11.7 per cent and April-

September. Thus the cascading effect of the several years mismangement of the economy is highlighted.

Industry

CSO's quick index of industrial growth for November was a low 1.7 per cent for December 1990, 4.9 per cent for January 1991, 4 per cent against the high growth rate registered in May 1990 at 14.79 per cent. The deceleration from May was due to the poor performance of manufactures at 2.6 per cent in November and 4.3 per cent in December. For April January 1990-91 industrial growth was 8.4 per cent. The signals of the private corporate sector set forth are rather confusing. On the one hand, the International Finance Corporation of the World Bank reports that unlike East Asia and even Sri Lanka, Nepal in South Asia, India's private sector investment is stagnating at around 10 per cent, actually falling in 1989 by 0.1 per cent to 12.2 per cent, due mainly to public investment which at 10 per cent showed a downward trend, plus the absence of a stable macro economic environment, high fiscal deficits, external debt and inflation. The CMIE on the other hand reports that for the period 1985-86 to 1989-90, 807 private sector industrial companies showed for 1989-90 high gross value added (Rs. 16,251 crores), gross capital formation (Rs. 7805 crores) and a turn around in profitability ratios which were declining during 1986-87—1987-88 In particular 458 private sector industrial companies among them showed very good results in sales and profitability and gross fixed capital formation. From the profit point of view, coffee companies top the list followed by aluminium, basic industrial chemicals and metal products units. The two signals are not really contradictory for the IFC. One refers to external criteria from which point of view private industry is not doing well, while CMIE analyses the internal programme only. Another not very encouraging signal is the RBI survey of 434 financial and investment companies which shows that the total funds mobilised by them being stagnant in 1987-88 compared to the previous year. The pattern of reserves shows that external sources was the major part (68.4 per cent). This rather stagnant picture does not include ICICI and HFDC which dominate the finance company and investment picture. A further negative point is the estimated 5 per cent shortfall from the target for 1990-91 for the infrastructure sector — coal, railways, steel, power, crude production. In the area of deregulation, in March government announced the broad branding of all telecom equipment for license purposes. However the fine print in the order shows that even within the broad binding frame work, the production of new lines will require prior government approval. This is not really deregulating. CMIE estimates that Rs. 13000 crores could be tapped from the partial privatisation of 26 public sector enterprises and this is hailed in comparison with Rs. 2500 crores provided through privatisation in the interim budget, referred to earlier. The CMIE proposal is questionable because a) it sells the profit making companies in the market, b) it is based on an ideological preference for the private sector, as will be noted later and c) the need for such a large sum at the disposal of the government has not been demonstrated. BIFR has proposed to the government major amendments in the Act in order to make the impact of the act — reducing the 7 year period to 5 and according the body more power. This needs to be acted on by the government to help revive specially the small scale sector.

Public Sector Enterprises

In the Interim budget, the proposal for the public sector to sell and transfer 20 per cent of its investment to mutual funds and public sector financial institutions, which was not however pursued as it was felt that an interim budget should not propose such an important policy decision, has had important repercussions. For one thing, the chairman of SCOPE states that the government has identified 25 large profit making public enterprises for deinvestment, to be followed later by a further 50 undertakings and describes this as privatisation. This is erroneous because it is simply a transfer of investment and ownership from one part of government (BPE) to another part (public financial institutions). But this was enough to sound alarm bells in the private sector that such transfer of 20 per cent of equity would "starve the private sector of funds for industrial expansion" and would discourage investors from saving, than the large savings collected by the Mutual Funds from the public, was to be invested in profit making stock exchange shares, whose healthy trend will be reversed. This is a panic reaction, as the amount involved in the 20 per cent transfer is small and will be part of total investments and savings anyway. The usual monthly (February) report that 33 units under the Department of Industrial development records a 20 per cent higher output compared to February of 1990 (and not the target). The annual survey of BPE for 1989-90 records higher growth rates in total capital employment and net sales but not in net worth and gross and net profits. It takes credit for the public enterprises having exported 30 per cent more in 1989-90 over 1988-89 which is the direct result of the government directive to them to export (even at a loss as in the case of SAIL) and that it is lower than the overall national 37 per cent export increase it has not referred to. What is needed is increase in the return on investment which in 1988-89, was a low 4.58 per cent on a huge capital of Rs. 85,000 crores and in the first half of 1990-91 recording a fall of 56.4 per cent in net profits compared to 1989-90, declining from Rs. 1103.3 crores in the latter period to Rs 481.3 crores in the first 6 months of 1990-91. This is attributed to increased losses (+48.6 per cent) of loss making companies as between the two periods. Its internal resource generation rose by 20.8 per cent (Rs. 10,772 crores) in 1989-90. It is too early to forecast the probable performance in 1990-91. Employment in the public sector units increased from 17.03 lakhs in 1978-79 to 22.36 lakhs in 1989-90. The total salary bill plus all welfare benefits increased by 12.42 per cent (Rs. 9,7429 crores). If the oil sector is excluded from this calculations, the return for the sector turns negative In the final analysis, the real test of the functioning of the public enterprises is the surplus for investment that they generate : till this crucial test is passed all other indicators are not more than PR exercises. It is reported that 33 enterprises achieved a turnover of Rs. 8345 crores which is 97 per cent of the year's target (1990-91). In particular BHEL achieved a turnover of Rs. 3100 crores in 1990-91 which is Rs. 50 crores more than the company's budget. The Comptroller and Auditor General in his report for 1988-89 to the Karnataka government states that 15 of the Karnataka State government companies have sustained cumulative losses based at Rs. 2,69,000 crores far exceeding their aaid up capital of Rs. 97.80 crores.

National Production Front

Steel

Steel production in March is reported to be on the rise. VSP expected its turnover

of Rs. 250 crores in 1990-91 to increase Rs. 1100 crores in 1991-92. SAIL reports a 6 per cent increase to 6,40,000 tonnes of saleable steel in February against a target 67.0 million tonnes for 1991-92 in the basis of the Rs. 40 crores. The April report refers to all facets, crude steel and saleable steel increasing in 1990-91 and its saving of Rs. 45 crores in input costs. Coal handling system instituted at the Haldia dock complex and other modernisation and mechanisation progammes. Under these conditions, given the severe foreign exchange shortage, the 5 per cent of total imports amounting to Rs. 2000 crores a year can be stopped to provide some relief to ou shortage.

Crude

The crude oil problem currently faced is that the annual crude import bill has shot up from last year's Rs. 6000 crores by about 50 per cent to Rs. 9000 crores this year. This is part of the problem of the country not being able to meet its foreign debt payment because at this rate the reserves which were Rs. 4000 crores at the beginning of March would be exhausted before the new government is in position. Fortunately there is a hope that this burden will not increase because crude prices are falling internationally and certainly not rising because since early 1980 the non OPEC countries have started increasing their crude output so that crude availability is exceeding even by a margin in demand. But the payment of Rs. 9000 crores a year on account of crude imports cannot be met by the country and to meet this there are only two ways out. One is to reduce our dependence on POL by cutting both our use of private and personal vehicles and transportation and economise its use by the public transport system suggested earlier. ONGC reports that 1990-91 was a productive year with the highest number of oil and gas discoveries in a single year. It also reports that the Rs. 3493 crores twin project (II and III) where the 10 million cubic metres of gas are now being flared, will become zero by 1994. In this matter, the recently concluded agreement between ONGC and SAIL under which ONGC transfers all its gas operations to SAIL should lead to greater efficiency in gas production and economy in its use. ONGC's record on gas production and use was not satisfactory. The other issue is to intensify production, through better foreign exploration companies bringing in their modern machinery and techniques to open up our offshore oil resources ONGC reports a welcome finding of gas at Endamarine off Kakinada giving 93,444 cubic metres a day. ONGC reports that it is closing down 100 more wells (in addition to the 35) out of its 700 to optimise its recovery.

Coal

Despite earlier reports on falling production and some serious handicaps such as an unprecedented power crisis, heavy cyclonic rains, Jharkand agitation and that on Mandal Commission, it is heartening that CIL reports a pick up in production at 190 million tonnes during the year 1990-91. That this is not a passing phase is underlined by the state of the art technology for mines being introduced for better communication for safety and electrification of the mines. Sophisticated communication and other electronic equipment have been installed in 20 mines in the eastern region whose result show improved safety and productivity. Around 400 more mines are to be similarly modernised and their effects

are eagerly awaited by consumers, particularly in thermal plants situated in Maharastra, Gujarat and the South, far away from the mines. But the question of increasing the price of coal must be faced. Along with raising the productivity of the coal mines, there is urgent need to raise the price of coal to help meet its escalating cost.

Agricultural Production

With the early spring rains, rabi production now under way looks as if it will be a record crop following a bumper kharif harvest. All the rabi food grain areas report good condition of growing. The bumper kharif crop has resulted in raising the stock of rice to 10.5 million tonnes and the wheat was 6.84 million tonnes as at March 1, 1991. The Economic Advisory Committee estimates that with the bumper wheat crop of 54 million tonnes, buffer stocks may rise beyond 27 million tonnes by July. This means the stock limits which were cut at the time of the Gulf crisis are restored. Similarly in view of the bumper mustard crop, the stock limits with wholesalers have been increased from 15 days to 1 month. For 1991-92, the signals are mixed. The monsoon forecast is that it will be normal but on the low side with 79 to 97 cm as against the above 100cm of the past 3 years. Against the 1990-91 foodgrains, production estimates of million tonnes, (1 million tonnes more 177.5 than the government target), comprising 101 3 million tonnes kharif and an estimated 74.7 to76.2 million tonnes rabi, the Planning Commission has fixed a target of 182.5 million tonnes for 1991-92. This assumes a little below normal monsoon. The national agricultural conference on April 29 and 30 however was sceptical about this target because of the poor monsoon expected. Pulses production will be 14.8 million tonnes and oil seeds 18 million tonnes in 1990-91 agricultural year. This means a third successive year of bumper crops. The draft Agricultural Policy has atlast been adopted by the cabinet but because of the resignation of the government and the country being under a care taker government, it has not been placed before Parliament for approval. It is now on hold. The policy has several positive points. The rate of agricultural growth has been set more realistically at 3.5 per cent against the original proposed 6 per cent, though even this is not realistic against the annual average of 2.6 per cent growth registered since independence. Second, it proposes to assure the farmer of higher return not by raising procurement prices but by a reduction in per unit cost as a means of attaining cost effectiveness of the economy. Third, the proposed decentralisation of irrigation management through the creation of pani panchayats (water cooperatives) will improve the availability of water per unit of expenditure. Fourth, the link between environmental protection and agricultural yields recongnised as seen in the shift to ground water as the principal source of irrigation and involvement of farmers and landless labourers in forestry programmes on wasteland development. There, are however, problems not covered by the policy, the most important being minimum wages and their computation in procurement prices, (an old problem), and reforms, the public distribution system and the introduction of modern dry land farming on a scale which will meet the challenge of cost effective agriculture in dry areas. Now that the finalisation of the draft policy has been postponed, the time available should be used to fill these gaps in the policy. The alternative draft circulated at the end of the month by the standing advisory committee

chaired by Sarad Joshi should be critically scrutinised to incorporate the valid points in the draft policy.

Foreign Trade and BOP

The trade deficit for the year 1990-91 is at an estimated Rs. 11,500 crores against Rs. 7731 crores in 1989-90 is ascribed mainly to the increased cost of petroleum and crude imports at Rs.10,500 crores compared to Rs. 6241 crores in 1989-90. There was also some increase in volume of imports from 26.36 million tonnes in the previous year to 29 2 million tonnes in 1990-91. For April-January 1990-91 the trade deficit was already Rs. 10,470 crores which is a rise of 38.9 per cent. For the year 1990-91 imports increased by 14.9 per cent, while exports increased by 10.4 per cent. The problem with BOP and foreign exchange reserves was dealt with earlier. To soften the effect on the reserves, the government obtained an IMF loan of $1.8 billion ($ 1 billion from the CCFF created to compensate the effect of the rise in crude prices and the Gulf war and $800 million as India's tranche of the IMF credit under the standby arrangement). This breathing space should be used to cut imports and expand exports. The government action on raising sharply the cash margins on all imports to achieve this was earlier referred to. It is imortant to bear in mind that this crisis is structural being caused by our heavy import intensive production of goods for the middle and upper classes and is a long term problem and must be treated as such. The governments assurance that the crisis will pass and the present curbs will be lifted should not be taken seriously. Probably due to a worsening foreign exchange reserves situation, the April, RBI announced relaxation of the cash margin for a) EOUs the 50 per cent cash margin be abolished b) exporters importing against advanced licenses the 50 per cent cash margin is dropped c) for imports under REP licenses the margin is reduced from 110 per cent to 50 per cent-provided in all cases banks satisfy themselves that no export bills are outstanding beyond 6 month from the date of export. These relaxations are aimed at not hampering the export effort. Another issue of a long term nature is the decision of the United States to retain India on its priority watch list under Special 301 for want of adequate protection to intellectual property in the country. (see Vol XIX p472). The US trade report states that there was little progress last year on efforts to improve intellectual property protection in India and that India's present protection is unacceptably weak and has especially adverse effects on US pharmaceuticals and chemical firms. That is the real US motivation. It says India's trade mark policies discriminate against foreign firms and that government approval is required for all new or expanded foreign investment in India with several limitations such as limits on foreign equity participation. To encourage exports, government has increased duty drawback rates for exports of over III items in engineering, chemicals, electronics, textiles and handicrafts. On the other hand it has cancelled the cash compensatory support (CSS) on intermediate goods because of the shortage of funds seen in the interim budget. On individual items, textile exports during the first 10 months (April-January 1990-91) rose to Rs. 6693.82 crores against the previous year's Rs. 5087.16 crores (a rise of 31 per cent). Exports of pharmaceuticals rose fourfold from Rs. 140 crores in 1985-86 to Rs. 665 crores in 1989-90. The star performer was bulk drugs. The exports during 1990-91 has slackened due mainly to

the requirement of value addition in exports to the USSR. This needs attention. The export earnings of Union Public Sector enterprises rose sharply by 30 per cent in 1989-90 to Rs. 6366 crores as noted earlier. Exports of jute goods have recorded Rs. 267 crores in the first 11 months of 1990-91 and jute mills are being pushed to increase their export production. Ex-Imp Bank reports that there was 109 per cent rise in value of exports as a result of exporters obtaining 95 centres in 30 countries. Cashew exports rose by 12.5 per cent in volume and 20 per cent in value in 1990. All machine tool export rose by 45 percent but could further increase its production and export of NC and NC machines. Marine exports in 1990-91 rose by 38.20 per cent in value and 22.56 in volume.

Aid and loans

In March there were a few loans recorded—notably from the Federal Republic of Germany for DM 174 million (Rs. 224 crores) for import of capital goods and fertilisers from Germany and for the Badri gas power project; from the UK for Rs. 30 crores for the Amleri coal mine: from ADB for $ 150 million to meet problems caused by Gulf crisis : from the World Bank for $112.8 million for increasing fuel wood production in Tamil Nadu, Rs. 1 crore for the Department to Electronics which has developed a rather unique scheme for the Department to earn all the foreign exchange it needs without any external borrowing through grants of additional REP licenses for exports of all electronic items including software, a loan of Rs. 60 crore for expansion of primary education in UP which should not use scarce foreign exchange for this purpose. Similarly the World Bank has approved a credit of $307 million for upgrading 264 polytechnics in 8 states including Tamil Nadu. IFC its private sector lending arm has approved a loan of $ 100 million for Housing Development Finance Corporation. The World Bank imposes condition for the grant of loans. It has deferred its decision on $575 million credit to the power sector for 3 months to reduce the large outstandings of SEBs to the union power undertakings. The loan request of $480 million from the railways has led the World Bank to require a revision of railway passenger fares a cut in subsidies for passenger traffic and a check on gross subsidisation. The loan negotiation have become negotiations on the World Bank's conditionalities for the loan. The loan of Rs. 400 crores to Kerala requires that the Kerala government entrust all drinking water supply schemes to the Kerala Water Authroriity, which the municipalities are strongly resisting. More generally the World Bank is increasingly subjecting all its loans to India to receiving assurances on some specific conditions. Loans to the energy sector are made dependent on receiving from the government assurances on the following questions: a) the recent development in the non petroleum energy sector including plans for additional power generation capacity, prospects for energy conservation, recent kinds and likely medium term changes in energy consumption : b) the energy pricing policy, particularly pricing of electricity in agriculture, where most state governments are providing near free electricity: c) on prices, the main reasons for the increase in both wholesale and consumer price inflation in 1990-91 and the relative influence of supply bottlenecks, demand pressures, changes in indirect taxes and administered prices, money growth and external factors in relation to oil growth income: d) the impact of the gradual depreciation of the Rupee in recent years of inflation, the prospects for

reducing inflation and the inflation target for 1991-92 and the measures contemplated to achieve the target: e) the recent and prospective trends in the labour market including employment, unemployment, industrial relations, wages and salaries, the reasons for a slow down in employment growth and measures taken to improve it; and f) the mounting arrears of the State Electricity Boards to the union power undertaking and how certain union appropriations from the state's outlay is distributed to these undertakings like NTPC, NHDC, DVC. The $1 billion credit to IDBI, IFCI and ICICI have been frozen because the Bank wants them to become commercial banks, dropping their development in the long run, with greater private sector participation and eventual with drawal of its government from them. More recently when the governor and deputy governor of the Reserve Bank went to Washington to negotiate a $1 billion loan from the World Bank, they had to return empty handed because the World Bank stated that 1) a government should be in position to undertake negotiations, ii) there is need for immediate "shock treatment" of commercial and development banks, iii) there should be drastic cut in government's raising resources from the banking sector through SLR. iv) the budget deficit should be reduced and CRR and SLR to be reduced to 30 per cent in 3 years after which there should be market determinedinterest rates on government debt, v) priority sector lending by banks should be immediately reduced to 20 per cent by removing larger borrowers among SSIs and farmers from its scope and reduced to 10 per cent in 3 years, vi) commercial banks should be given immediately operational autonomy, and interest rates of development finance institutions (long term lending rates), of export loans and mortgages and capital market debt issues should be rationalised and liberalised, vii) private sector entry should be expanded, allowing for competition, viii) private sector entry into investment banking, increased private sector participation in ICICI should be allowed, ix) tax preference for UTI should be eliminated and private sector mutual funds allowed, x) better regulation of capital market transactions should be allowed, while decreasing direct control. The World Bank has cancelled the June meeting of the Aid India Consortium on the grounds that there must be an elected government in place to which any aid will be dependent on the basis of financial reforms including large scale privatisation which should be clearly set forth in the budget. As noted earlier, at the request of the government, it has organised an 'informal session' of the Aid India Consortium at which 6 major donor countries along with IMF and ADB were present at which some sort of understanding for the grant of $ 1 billion emergency credit was agreed upon. The Bank has now come out in the open and taking advantage of the financial difficulties of the country, is laying down as a condition for its loans that of the members of the consortium, that its programme of structural adjustment of the Indian economy (market orientation of the economy, total delicensing and deregulation, outward export led development, privatisation etc) should be accepted. In light of all this, the time has now come for the country to go back to the V Plan draft proposal to limit the imports it needs to its export earnings minus debt servicing, allowing for foreign aid only to service its debts—which is the principle of zero net aid. This is urgent as the government announces that the country's total public debt-both internal and external

was Rs. 183,183.26 crores in March 31, 1991 and Rs. 207,247.09 crores in March 1992, with internal debt going up from Rs. 151,353.32 crores to Rs. 171,634.67 crores and external debt from Rs. 31,830.94 crores to Rs. 35,612.42 crores. The country needs to decide on the feasible levels of living, relying on its own resources to meet this situation, which our profligacy in recent years has brought about.

International

IMF

In its Government Finance Year Book, IMF reports that subsidies and other current transfers were far larger at half of the central government expenditure of industrial countries than in developing countries where it accounts for slightly more than one fourth of central government expenditure. Why then does the Fund (and the World Bank) insist when making loans to the developing countries on their cutting subsidies to prune their deficits ? (One of the conditions of IMF and World Bank loan to India is precisely this as noted above.) On fiscal deficits, it reports that related to GDP it continued to decline in industrial countries at 2.3 per cent in 1988 against 5.2 per cent in 1983. But government debt continued to grow and despite sharply reduced interest rates by 1989, interest on central government debt was 12.5 per cent of total expenditure plus lending in industrial countries, against 10.2 per cent in 1983. For developing countries fiscal deficits as a percentage of GDP was higher than in industrial countries. In 1988 deficit of central government in Africa was large, one country recording a high 26.5 per cent. In Asia also the deficit was large - with one country registering 12.7 per cent. Similarly in West Asia one country's deficit was 9·5 per cent. This is balanced by surplus in one or two other countries in the year. On general government expenditure, the developing countries expenditures on social security, welfare, housing as community amenities was 5.3 per cent of GDP which was less then half the rate of that of the industrial countries and yet IMF insists in its structural adjustments accompanying its loans in cutting these expenditures. On education ndustrial countries spend 5 per cent of GDP and developing countries share have risen to 3.9 per cent by 1985; on defence, industrial ccuntries have stabilised at 4.5 per cent of GDP during 1982-83, and that of developing countries declining from a high 3.5 per cent in 1980 to 2.7 per cent in 1989.

World Trade

A GATT report states that the growth n World trade and output is likely to slow down for the third successive year in 1991, but global recession, despite the uncertainties of the Gulf war, is unlikely. Merchandise trade volume rose by 5 per cent in 1990 against 9 per cent in 1989 and 8.5 per cent in 1988. Trade value rose to 1.3 per cent to a record of $3.5 trillion, in part due to a weaker dollar. The trade in commercial and financial services grew at an estimated 12 per cent to $770 billions in 1990 from $690 billion in 1989. The report also states that because of Gulf war India, Jordan, Turkey, Romania and Yugoslavia lost an appreciable amount of trade, particularly as a result of a sharp fall in tourist trade which contributed 25 per cent of total exports. There was also a sharp drop in workers remittances from Kuwait and Iraq to India, Bangladesh, Pakistan and Srilanka and the Philippines. The unified Germany

overtook the United States as the world's top merchandise exporter with deliveries of $421 billion, which was 12.1 per cent of world export. Japan remained the third largest exporter. GATT in its April report calls on European Community members to lower their trade barriers, particularly in agriculture which like those of the US and Japan is holding back world development.

World Economy

IMF and ADB in their report released in April agreed that the outlook for the world economy in 1991 is sombre and uncertain. IMF revising its earlier forecast of a growth of 2.4 per cent places it at 1.4 per cent and ADB at between 1 and 2 per cent. IMF sees a rebound to 2.8 per cent in 1992 ascribes the fall to the depth of US recession, while ADB refers to many other causes including the Gulf crisis, the fragile world banking system and the huge capital requirement of the USSR and Eastern Europe. Several UN agencies (UNDP, UNFPA and UNICEF) are critical of the developing countries cry for more resources to back their human development programme —education, health, sanitation as against their mounting expenditures on armaments.

Asian Development

In April ESCAP's 47th session held in Seoul called attention to the deleterious effect of the Gulf war on their economies and the need to speedily and successfully conclude the resumed Uruguay round and abopted a plan of action calling for a) active suoport of industrial countries to accelerate the industrial and technological development of the developing world, b) enhanced and closer cooperation among developing countries at the global, regional and sub regional level of mutual benefits, c) participation in the fast developing science and technology in the world economy, and d) integration of markets of developing countries and setting up of joint ventures and programmes for training and upgrading of skills. Against these plans for the future, the Asian Development Outlook 1991, the annual ADB publication calls attention to the developing countries of Asia maintaining their growth momentum in 1990 at a real 5.8 per cent despite the slow down in the world economy and the Gulf crisis against that of the 2.4 per cent of the developing world as a whole and the 1.7 per cent recorded by the world economy. The outlook sees a promising future for the Asian countries in the next 2 years. But it warns that market and policy failures rather than economic development are the primary causes for them rather than economic development are the primary cause for their environmental degradation. It says the "policies which break the linkage between scarcity and prices, between social benefits and other costs have done more damage to the environment than economic or industrial development and population growth", policy failures inclusive governmental failures of knowing when and how to intervene. These are partly true but the major cause for environmental degradation is economic development — both industrial and agricultural — without thought to their cost in environmental terms. The proposal for the Clearing House in the Plan of action which will provide information on investment opportunities in Asian counties should also include the costs involved in such investment in environmental decay, the costs being built into the investments

propoesd. The outlook also calls attention to the fact that several Asian countries—Bangladesh, Fiji, India, Pakistan, Papua and New Guinea, Philippines and Sri Lanka—will continue to feel the impact of last year's high oil prices hike by the Gulf crisis. Unlike the forecast that oil prices will lose at the end of the Gulf war, the oil shock will continue to affect the economies, which by the end of 1991 will lose over $1 billion on this count. The need for planning to meet the continuing high prices of oil has been earlier emphasised-through reducing its use and conserving it as much as possible.

Asian Clearing Union

The Asian clearing union comprising 7 members Pakistan, Sri Lanka, Nepal Bangladesh, India, Myanmar and Iran is to be expanded. Negotiations are underway for the admission of 13 more members, China Bhutan, Indonesia, Japan, Republic of Korea, Laos, Malaysia, Maldives, Philippines, Singapore, Thailand, Turkey, and Vietnam. The volume of intra - regional trade flows of these countries in the previous years shows that given the generally balanced character of this trade, the expansion of the union to any of these countries will not cause any problems in trade with countries which do not join the Union. On the other hand, with the expansion, the long term benefit of a strong trade expansion could be better exploited by the countries that had become members.

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II. Agricultural Development in Tamil Nadu

Paddy and other crops

The paddy crops have matured and the paddy farmers are now marketing their crops in March and April. Their Paddy sales to the Tamil Nadu Civil Supplies agents as of mid April amount to 11 lakh tonnes so that by the end of the marketing season, 12 lakh tonnes would be procured by the Corporation against the target of 15.45 lakh tonnes. The target not being attained is due to the farmers in Salem, Periyar and Coimbatore and in parts of Tiruchi suffering from adverse seasonal conditions, mainly lack of water due to failure of the rains. The farmers in Thanjavur have done very well, marketing 8 lakh tonnes and will be selling 10 lakh tonnes by the end of season, though it has faced the problem of Mettur having received no water from Karnataka, despite the efforts made by them and the government. Towards the end of March, and in early and mid April the 3 member Cauvery water dispute tribunal visited the areas and in addition to presenting their needs and demands in memorandum and interviews before the Commission, over 8 lakh farmers and their families formed a human chain over 250 kms lining the route of the tribunal. This was a moving demonstration of the serious human problems and sufferings of the farmers and their families. There was one small positive point in this grim picture. The Supreme Court has ruled that the tribunal erred in stating that it had no power to make an interim award as requested by Tamil Nadu (see Vol XX p31). The

court has held that the tribunal has the power and should act accordingly. The farmers despite water shortage used every drop of surface and underground water to maintain the productivity of the paddy farm. The monopoly procurement scheme is accepted by the farmers in Thanjavur district who have responded well to procurement operations. Farmers in Pudukottai and South Arcot district have also done well and procurement from them has been satisfactory-77,000 tonnes against the target of 1.6 lakh tonnes in South Arcot and 33,000 tonnes against the target of 50,000 in Pudukottai district so far. The farmers in Ramanathapuram have exceeded their 5000 tonnes target by 1700 tonnes. To help the farmers in the coming years the government is taking a series of measures. First, there is to be a focus on rainfed farming under the new union scheme of national water shed development programme (NAWAPRAG) under which Dharmapuri district has been chosen where 75 per cent of farming is rainfed. Under the project moisture is being conserved and the scheme will be expanded from the 4 villages in 1989-90 to 21 villages which will help the small and marginal farmers to grow more food over an area of 8000 hectares. A second scheme is to provide the farmer with high yielding varieties of paddy so that over the 3 seasons Kar/Kuruvai, samba/swarnavari and navarai (which means that the farmer is working in the fields all the year round), the HYV seeds can help him obtain 5.5 tonnes a hectare. Third, a Rs. 1 crore research and development project for improved vegetables seed production has been launched at the T Farm to help farmers, including paddy farmers facing water shortage to grow high yielding varieties and hybrids of vegetables, including the new high yielding variety of tomato J—1.

Research results

Of the 28 research results reported in March, five deserve special attention, as their results can be immediately transferred to the farmer. The first programme refers to rice which the paddy farmers can now use — from Annamalai University on the use of organic manures and wastes like Neyveli's fly ash which increase the paddy yield sensibly from IIRI on soil and atmospheric nitrogen management for the low land paddy farmer who is the majority for Tamil Nadu Farmers, from TRRI, Aduthurai on dual cropping of cotton and blackgram in rice fallow which the cauvery farmer will be interested in and from Bijapur on use of biofertilisers as an affordable paddy plant nutrient in place of chemical fertiliser, also of interest now to the paddy farmer as the price of chemical fertiliser is shooting up. The second group of results is of interest to the sugarcane farmer, from TNAU which have used the Mexican beetle imported by Horticulture Research Institute Bangalore to completely destroy the dreaded partherim weed, from APAU on the use of pre-emergence herbicide to check weeds in cane, which the rabi groundnut farmer is looking for and from the Sugarcane Research Institute, Cuddalore on how the farmer can control the sett rod disease in sugarcane plantations. The third results refer to farm group sorghum, millet and greengram, from TNAU on the 4 management practices to be followed by the farmer growing cumbu to counter the moving plant pathagens, from the Agricultural Research Station, Gulbarga on the integrated approach to be followed by sorghum (high yielding and hybrid varieties) farmers to counter the many caterpillar pests of the crop,

and from the agriculture research station Bijapur on how the green gram farmer can check the leaf spot fungi of the crop. The fourth group refers to the grape vine farmers, from the Horticultural Research Institute, Bangalore where an integrated package has been developed to control grapevine pest affecting them in this state and which he can put to use immediately. The fifth group refers to programmme of interest to animal and diary, farmers, from Bihar Veterinary College on eradicating the revamping buffalo infection, from the Dairy Research Institute, Karnal the booster vaccination which it has developed to control the disease which is killing off sheep, from TNAU, Madras on pregnancy and post natal care of dairy animals and the Karaikal Farms programme to cattle farmer to use the popular green leaf munani tree as excellent, high nutritive fodder for cattle. In April, 38 research reports were recorded of which 4 are of immediate interest to the farming community. 4 reports on rice from the Rice Research Directorate, Hyderabad on using organic manure to increase the paddy crop two fold, from Annamalai university on use of fertiliser by the farmer to control weed growth. from TNRRI, Aduthurai on use of ammonium poly phosphate which increase paddy yield around 30 per cent, and from the Hyderabad Directorate on use of Vikramarya to resist the rice tungro virus and the green leaf hopper—all these can be transferred now to the paddy farmer to help increase the crop. Second, reports on the new sword bean variety developed by TNAU and the means of controlling the redgram pod bearer developed by AP agricultural university and the use of wasps to control the pod bearer in all kinds of grams developed by SV agricultural college, Tirupathy—are of interest to farmers and vegetable growers. Third, sunflower growing farmers would profit from using Borax dusting to increase sunflower yield demonstrated by GKVK, UAS, Bangalore which is similar to the results shown by AE Madurai on means of increasing sunflower yields through presoaking of seeds and giving them micro nutrients. Fourth, the report from the Veterinary College, Bidar on controlling Anthrax in sheep, and the IVRI Iratnagar's report on means of removing the foreign body which is the hardware disease in cattle are of immediate interest to cattle farmers.

Irrigation

The government's crash programme for standardisation of minor irrigation sources and sinking of irrigation wells at a cost of Rs. 20 crores for small and marginal SC & ST farmers has a deadline—March 31. This is to be regretted because the standardisation and modernisation has to cover over 1840 minor irrigation tanks maintained by the panchayat union (at a cost of Rs. 10 crores) improvement of 580 percolation ponds (Rs. 6.64 crores) and sinking 1720 irrigation wells (Rs. 4 crores). The deadline has to be extended so that the work for desilting irrigation channels to Bhavani, Amaravathi and Vaigai systems are completed. In planning important schemes like this, the time must be fixed realistically and adhered to. The TEDA project to subsidise farmers purchasing solar power sprayer should be coordinated with this scheme.

Sericulture

An additional 15,000 acres over the current 24,000 acres are being brought under mulberry cultivation as

part of the World Bank aided national sericulture project. 4 private granneries have been issued licenses for the production of silk worms eggs along with a farmers training centre in sericulture, and an additional cocoon market which have been set up. There are 40 private enterprises in palade taluk in the district manufacturing silk with Tamil Nadu Marketing Federation at Kancheepuram providing marketing.

Cattle and dairy development

A 7 year scheme for cattle development in the state with Rs. 37.25 crores of World Bank aid has started from April 1991. 10 depots for processing, storing and distributing semen are being set up in the five district headquarters. The main plank of the government's livestock policy is to both provide adequate veterinary care facilities to cattle farmers and to create disease free zones as seen in the substantial reduction in the mortality and morbidity of the livestock caused by endemic diseases. The overall production of veterinary biological products has increased from 190 million tonnes a year in the mid seventies to over 900 million tonnes now, along with a commensurate increase in veterinary manpower and a qualitative improvement in R & D and training output. Funding is a major constraint in extending this programme particularly the training of veterinary doctors and purchase of equipment and medicines. In March the foundation was laid for 5 projects under the dairy development programme, making the start of OPERATION Flood III in the state. The projects are the third dairy in Madras at Sholinganallur (Rs. 18 crores) and dairies at Tiruchi and Villupuram, a powder plant at Erode, Chilling centres at Perambalur and Kovilpatti and Sankaranar and a 100 tonne cattle feed plant at Kappulam. With this dairy farming will begin to have the infrastructure it needs and that has lackened.

Coffee and Tea

The report of IIM, Calcutta on coffee marketing (see Vol XXI pp 169) recommends replacing the existing market system (pool marketing), because originally starts after the war as a relief measure, it has become a legal constriction under the Coffee Act. It also provides no incentive to produce better quality coffee because of the uniform price paid by the Board along with other serious infirmities of the system. The study recommends an optional pooling system which grants freedom of choice to the growers to market their product either directly or through the Board's pools. This will also lead to competition and price advantage to the growers. Now the Coffee Board and the Ministry Of Commerce must act. On the tea front, a high yielding clone yielding 65 quintals of tea per hectare instead of the national average of 16 quintals—TV29—was released at the end of March. This would be a contribution to the galloping rates of internal tea consumpton which is over 4 per cent against the 2.5 per cent increase in productivity. To meet the demand of 1100 million kg of tea by 2000 AD, 400 million more will have to be produced over the 1989-90 production. An international meeting on tea technology is to be held in January 1990 to provide a global view of progress on tea engineering and machinery. In April a strong case was made by the Tea

Time Magazine for cooperation between India and Sri Lanka in tea production and packaging as the only way to meeting the increasing demand of foreign consumers for packaged and processed tea. Why this cooperation has to be urged by others is not clear. Also in April, India decided to pull out of the Canadian Tea Council in view of the alarmingly low share of Indian tea imports in Canada. It had earlier decided to pull out of the US Tea Council for a similar reason. This was a case of foreign exchange being spent without any return.

Spices

Spices exports in 1990-91 at Rs. 238.67 crores were short of the target of Rs. 278 crores and lower than the 1989-90 exports at Rs. 275.76 crores: a) the fall in unit value of pepper was the main reason as it declined from 34,462 tonnes valued at Rs. 152.97 in 1989-90 to 31,871 tonnes valued at Rs. 111.06 crores in 1990-91. Against the Rs. 50 crores lost in the Gulf market, there was a firm trend in the domestic market: b) cardamon exports rose during the year to 379 tonnes valued at Rs 10.22 crores from 180 tonnes at Rs. 3.06 crores in 1989-90: c) exports of chillies improved from 11,983 crores tonnes at Rs. 25.85 crores in 1989-90 to 23,178 tonnes valued at Rs. 27.88 crores in 1990-91: d) spice oils exceeded the target of 700 tonnes valued at Rs. 30 crores to 879 tonnes at Rs. 31.26 crores, with 1989-90 exports at 713 tonnes at Rs. 22.86 crores. There is need to increase the yield per hectare of pepper and cardamom to bring them in line with the productivity per hectare in Brazil and Malaysia for pepper and Gautamela for cardamom.

Rubber

Rubber users and rubber goods industry want the union government to maintain a rubber stock of 3 months supply as a means of maintaining a stable price for rubber. The government however is planning to bring the stock down to 2 months supply as a means of raising the benchmark price by Rs. 3650 to Rs. 21,450 a tonne. The raising of the reference price by government in late March has not raised prices beyond Rs. 21 per kg where it stagnates, falling to Rs. 19 per kg for the lot produced by small growers. Here it is noted that the foreign exchange crunch is reducing rubber imports. According to the International Rubber Study Group while world rubber consumption declined by 1 per cent in 1990, Indian rubber consumption increased by 9.2 per cent and the gap between supply and demand is expected to widen during the year and if the stock is maintained at 2 months supply, the higher consumption will result in more imports, to increase the stock to 3 months. The decision to bring down the stock to 2 months is a consequence of both the foreign exchange crunch and the need to help growers realise higher prices. The growers state the supply at 3,85,700 tonnes including production of 3.35 lakh tonnes and the balance from imports is in excess of demand at 3,58,400 tonnes. By the end of the month, the situation has been reversed with demand exceeding supply and so industry has to accept the lower stock and enhance managerial performance. In the long run, rubber production has to increase as demand is inexorably increasing and for this it is not enough to keep planning for production in non traditional areas. As tyre companies are the major users,

it is in their interest, for them to join the Rubber Board and the concerned state governments—Maharastra, Goa, AP Assam, Tripura and the North Eastern states to launch captive plantation in a big way over a period and reduce or do away with imports. No single entity can do this—not the Rubber Board by itself, not the state concerned but only the two with the user indudstry: This the union government should sponsor. In April at the start of the New Year, rubber users have asked government not to import rubber this year as the rubber stock on 31 March was a high 23,700 tonnes. Unlike till 5 years ago when rubber demand was increasing by 5 to 7 per cent annually, in the last 3 years it has been declining. This together with the improved and increased production may lead to a net surplus of 42,200 tonnes at March 31, 1992. Hence there is need to take the users call to stop imports for the year seriously.

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IV Industrial Development in Tamil Nadu

Industrialisation in Tamil Nadu

In March and April there was a spate of measures in the direction of the industrialisation, starting with the first 2 important decisions which set the scene for the state's ongoing industrialisation. The *first* is the reiterated decision of the government in mid March to open the field *of power generation* for the private sector, starting with a massive investment of Rs. 5000 crores to generate 1500 MW using the lignite deposits in Jayakondacholapuram. This involves two projects, one for mining the lignite and the other a thermal plant for power generation. The power generated is to be purchased by TNEB based on a two part tariff, the first ensuring recoverage of fixed costs and the second meeting variable expenses. There are problems of pricing the power generated but Maharastra which has 4 plants operated by the private sector shows that all these problems of pricing can be met, to enable the private sector to make its contribution to this essential industrial infrastructure. The *second* major decision relates to the decision to *disinvest* in 20 companies to the extent of Rs. 30 crores. This unloading of its shares in the joint sector and public sector projects in the first instance involving 12 companies—Vanavit Dyes and Chemicals, Malladi Drugs and Pharmaceuticals and 10 other such companies. The largest company to disinvest 46 per cent of government's share is Tuticorin, Alkali Chemicals and Fertilisers and Southern Agni furnace—both to SPIC. This not only saves large public resources but also ensures that industry is run by able private sector entrepreneurs and stops governments increasing and continuing losses. Third, the government in early April announced certain changes in its policy with regard to *sales tax deferral and state capital subsidy* to make them more attractive. *Fourth*, for want of assured water sources, the private sector has not been able to set up *industries in Arkonam.* 50 TN Water Supply and Sewerage Board has offered to provide 20 to 25

milion gallons of secondary treated sewerage water at a cost of Rs. 50 crores. This will help *Tata* to set up the steel plant and the Lakshmi group to set up some industrial units. *Fifth,* in March the *Second Sendzimir mill* of the Salem steel plant was commissioned increasing the production capacity of the plant from 32,000 tonnes of cold rolled stainless sheets and coils per annum to 70,000 tonnes. The union government is reported to have approved the installation of hot rolling facility at the Salem Plant at a cost of Rs. 425 crores. The project will be ready in 48 months. It will roll stainless steel plates from Durgapur at 100,000 tonnes per annum. There are however some negative features of this project which will be referred under the negative sub sector of this section. *Sixth,* the *Second Steel scrap yard* in the country is being opened in Madras in July 1991. It will supply scrap on "off the shelf" basis to the large number of consumers particularly the many small producers as well as over 100 undertakings including BHEL, Tiruchi and Ranipet, HVF, Avadi, ONGC and IOC in the state. In 1990-91 the state's demand for scrap was over Rs. 128 crores. The yard is to be located in the Madras Port from which the scrap which is all imported will be immediately made available to industry. *Seventh,* MRL plans a) setting up another 3 million tonnes refinery (Rs. 1200 crores cost) at Manali. With this the total MRL refinery capacity will be 9.5 million tonnes : also b) setting up a Rs. 25 crore LPG near Narimanam to use the associated gas and a unit for converting naphtha to motor spirit. *Eighth, BHEL* reports that its seamless steel tube plant has produced the first boiler quality super heater tube for meeting the spares requirement and avoid imports for the 40 Russian made boilers under operation in different parts of the country. *Ninth, TIDCO* reports that in 1990-91 three joint sector projects UB Petro Products at Manali, Integrated Water Proofings in Chengai Anna and Sakthi Soya at Coimbatore went on stream. In 1991-92 two projects—TN Telecommunication at Arkonam and Sangam Aluminium at Hosur will go on stream. *Tenth, Madras Fertilisers* reports diversifying its production into bio fertilisers production, starting with 100 tonnes this year to be sold in Tamil Nadu. *Eleventh, Tamil Nadu Telecommunications* is setting up a Rs. 28.65 core project to manufacture 6.25 lakh conductor kilometers of jelly filled cables per annum. *Twelfth,* on *leather,* the country's first exclusive industrial estate for agro based units is being launched, starting with the complex which will house 100 small scale leather units at 170 acre Thirumazhisai, sponsored by Tamil Nadu Small Industries Development Corporation. Leather exports however, face several problems mainly from changing government policies which makes the attainment of the 1991-92 target of Rs. 3400 crores problematic, given the difficulty of attaining 1990-91 target of Rs. 2700 crores. An AP unit, the *Andhra Pradesh Industrial Infrastructure Corporation* (APFIC) is setting up a Rs. 2 crore leather industrial estate at Tada, 60 kms from Madras as a complement to the Dindigul Leather estate referred to earlier. This TADA Complex is to meet the large demand of the state's leather exporters. 80 per cent of the leather in AP is processed in Madras as do Delhi and Bombay based leather units. The estate spread over 117 acres will have telecom facilities with the help of the Telecom Department, space for units, for exhibition, housing for workers and foreign buyers. *Thirteenth,* TNEB is setting up a 300 MW combined cycle

gas plant to exploit efficiently the gas reserves in the cauvery basin. The combined cycle operation will improve the efficiency with which heat is converted into electrical energy from the average 35 per cent to 48 per cent. ONGC investment in the South in 1991-92 will be Rs. 380 crores (+ Rs. 30 crores compared to 1990-91). ONGC also announces in April the discovery in Kamalapuram in the Cauvery basin of a major Oil field producing 700 barrels a day. *Fourteenth, DGS & D* is setting up a branch office in Madras designating for this purpose SIDCO as the nodal agency. This will meet the marketing needs of the state's small scale enterpreneurs who lack both marketing expertise and marketing channels and is perhaps one of the causes for the spreading sickness in the small sector. *Fifteenth, MRF's* diversification programme producing tyres of different and new types with upgraded technology, opening a new factory in Meda in AP (in addition to those in Madras, Kerala and Goa) and the speciality surface quoting plant coming up at Cuddalore is truly remarkable setting high standard for all industrial units in the state. *Sixteenth,* parallel to TNEB's combined cycle plant, *ONGC* is supplying 500 cubic metres of cauvery gas a day to to MRL which will compress it to use as fuel for the Cholan Transport Corporation. This experiment will not only avoid wastefully flaring the gas, but to be used to economise on transportation fuel which are to be extended to other MRL points. *Seventeenth,* the *Kothari group* after its many forays into loss making industries like food processing and more stable fertilisers is now repositioning itself to enter well chartered fields. Exports, and production of leather, garments, granite and computers are rejuvenating the group's activities and investment and releasing growth impulses in the state and other parts of the region. *Eighteenth,* the Madras city based *Shriram groups,* comprising hire purchase and financial services, has moved into AP, taking over super shock absorbers, manufacturing a wide range of absorbers with US and Italian collaborators. In this Shriram will be tying up with the TVS group to market the products. *Nineteenth, SPIC* announces its plans for augmenting the fertiliser complex at Tuticorin and the project for producing 1000 MMU of Pencillin G and 100 tonnes of rifampictin annually. Further ammonia storage and production are to be upgraded saving energy consumption. *Twentieth,* exports of real *Madras Handkerchiefs (RMHK)* are booming particularly to Africa. The Rs. 5 crore exports in 1984-85 have for the 9 months April to December 1990 spurted to Rs. 18 crore and for the full year 1990-91 will be Rs. 24 crores (double of the previous year). There are two problems faced by the industry—the difficulties of the round about Sea transport route to Benim and the foreign exchange limitation of the African countries. Both are being faced and solved. Also a specialised Export Processing Zone for apparels is being planned for the state. *Twentyfirst,* parallely exports of *Handloom fabrics and made ups* for 1991 is set to reach Rs. 400 crores after the 1991-92 target of Rs. 425 crores. For April-December 1990 handloom exports are Rs. 631.86 crores, of which export of fabrics and made ups were Rs. 287.81 crores. Here too there is a significant increase in export of Real Madras Handkerchiefs as well as lungis made ups. There is an increasing demand in US and Europe for floor coverings and high value added items. *Twenty second,* the *Institute of Handloom Technology,* Salem reports developing improved handloom models designed to raise weavers productivity and the quality of fabrics to international standards.

This will develop Karur and Madurai—the state's handloom area in the first phase. *Twentytythird, MEPZ* reports exports of Rs. 60 crores in 1990-91 and a doubling to this year. *Twentyfourth,* granite exports from the state have expanded to Rs. 70 crores in 1990-91 against Rs. 45 crores and Rs. 29 crores in the 2 previous years. *Twentyfifth, EIDParry* will expand its sanitary ware capacity and improve its market share in the North and West following its takeover of Falcon Gulf ceramics. It will be 6000 tonnes to 8000 tonnes production at its Ranipet plant. *Finally, TIDCO* announces the setting up of a Rs. 375 crores automobile tyres and tubes plant in the joint sector. Located in Kanyakumari it will have an annual capacity of 15 lakh tyres and 29 lakh tubes.

There were also some negative factors at work in the industrialisation area in March and April. *First,* the *Salem steel plant represents* the kind of delay in gestation which leads to deindustrialisation. The foundation of the plant was laid in September 16, 1970 (by Mrs. Gandhi), construction was inaugurated on June 13, 1972 (by Mr. M. Kumaramangalam), the first stage of the first sendzimir mill was commissioned on September 13, 1981 (54 months after sanction), the second mill was installed on March 24. The second stage for additional facilities for meeting and refining stainless steel, continuous casting for hot rolling of stainless slabs at the 1977 estimate of Rs 56 crores for a production of 2.2 lakh tonnes of finished steel. This has been tossed back and forth and is now scaled down to Rs. 423 crores for the setting up of hot rolling facilities. PIB has cleared the project at this cost, it now has to get cabinet clearance which will have to wait the establishment of the new government, so that if all goes well, action on this stage of making Salem an integrated plant could start in early 1992-over two decades since its start. *Second, the Tamil Nadu Industrial Captive Power Organisation* (TICAPCO) which was set up to promote a 210MW lignite based power generation plant has rejected TIDCO's offer of a joint sector unit and lignite mining as it has received an assurance from NLC (that its total needs for lignite will be met and that after 5 years, the company can apply to the union government for lignite mining rights in Srimushnam near NLC following the government position to allow private sector mining. This actual outcome is a positive industrisation factor but long delay in getting matters clarified has lengthened the gestation period and pushed up investment costs. That is the negative element. *Third,* the deadlock on the B & C mills negotiation which could lead to its reopening and functioning have ended in an impasse in April. The Trade Unions have appealed to the High Court to adjudicate the case and the High Court has appointed a commission to determine the merits of the case. What is worrisome is that the round was called the final one and neither management nor the union budged an inch. The daily all round loss to the workers, the company and the public is mounting. *Fourth,* the *sugar industry* in the state faces a serious loss because with the fall of the government, the levy price of sugar will continue unrevised at the previous year's rate of Rs. 519.88 per quintal which falls far short of covering the increase in the cost of cane and conversion costs plus the falling recoveries rates being Rs. 8.74 from this season. The difference between the cost and levy price as estimated at Rs. 50 per quintal and is in part recovered from the open market sales—the non levy

buyers—whose demand needs to be cut to prevent further expansion of this water intensive industry and to that extent this delay in revising its levy price is not a negative factor. But there is no reason why levy price consumers should not pay their share of the cost escalation. The poor do not use the white mill sugar. *Fifth, BHEL, Tiruchi* reports a poor order book position which can keep it operating only for 18 months from April 1991. The programme for 1992-93 is a question mark. *Sixth, Tanneries* concentrated at Ranipet, Ambur, Vanyambadi, Erode, Dindigul, Pallavaram and the Tiruchi district are spreading pollution at an alarming rate, making land unfit for cultivation and water polluted. The tanneries are not doing their share to control pollution. *Seventh,* following last month's report, *Kothari General Tools* is facing a series of problems regarding financing, marketing and lack of cooperation from its concerned sectors. *Finally,* the rehabilitation of the sick *Petro Chem Ltd. being taken over by the Cochin based Mahavir Plantations* on the basis of a BIFR two stage package of Rs. 19.15 crores. Mahavir Plantations is taking over MPCL for a song—15 per cent of equity and 25 per cent preference capital from institutions at a price to be negotiated with them.

Like in February, these negative elements in March and April have a smaller impact on the state's industrialisation than the many positive factors noted earlier.

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IV. Education, Science and Health

Educational reforms

Bihar has formulated and is executing a comprehensive educational programme covering : a) basic education comprising i) universalisation of elementary education involving a composite programme of access to primary education for all children up to 14 years of age through school system as far as possible and through part time non formal education where necessary ; ii) drastic reduction of adult iliteracy, with the literacy level in the 15-35 age groups being raised to atleast 80 per cent : iii) equalisation of educational opportunities with particular focus on women, SC and ST and poorer sections of society : iv) relating education to the working and living conditions of people and at laying special emphasis on science, environ ment and inculcation of a sense of social justice. The project has started in a few blocks in 3 districts and will cover 20 districts in a phased manner. The cost of the project is estimated at Rs. 360 crores over period of 5 years. This is a small amount of a little over Rs. 70 crores a year which should be paid as a priority and so the reliance on Unicef for 50 per cent of its cost is not justified.

Adult literacy

The adult literacy movement is gathering force. Following the example of Ernakulam where 100 per cent literacy was achieved in 1990, the Interna-

tional Literacy Year (see VXX pp. 289; 509 and 512) under the sponsorship of BGVS and the National Literacy Mission, a number of districts in West Bengal, AP, Karnataka, Bihar, Tamil Nadu, all of Pondicherry UT are attaining the total literacy target. Now Kerala has become the first 100 per cent literate state, and was proclaimed literate as such on April 18. It made some 28 lakh illiterate during 1990-91. In 1981 its literacy rate was recorded at 70 per cent, in the 1991 census it was 90.50 per cent. It had the difficult task of tackling the residual 7 per cent (18 lakh) in the 15-45 age group, which includes its tribals who have not been brought to school and where trained instructors are not available, for which a special campaign of training tribal inspectors is under way. The programme was carefully planned in 43 project areas, each catering to 50,000 to 60,000 learners. Voluntary efforts by KSSP, Kerala Saksharata Samithi mobilised 2.37 lakh instructors and divided each project area into 20 sub project areas each catering to 2500 and 4000 learners. All political parties, and government, union, state and local, cooperated fully and the literacy goal was achieved in 50 days. This is an example for other states to follow. But Kerala has a problem—of growing educated unemployment raising the question whether now attention needs to be given equally to employment generating programmes. Kerala's experience shows that education and literacy does not ipso facto solve the problem of employment: it does reduce the rate of population growth, it increases women's education and awareness, it reduces the infant mortality which is at or below the rate in the Industrialised country and it also provides a sense of self reliance as can be seen from the lower level of poverty infact in the state (not in CSO statistics, because the CSO norm does not take in all the food intake of the Kerala population). Another literacy programme announced in March is that of ISRO which reports that it had successfully carried out a satellite based audio visual system for training adult literacy trainers at several villages in Gandhigram district in Gujarat. After each lecture, the trainees from each class room held discussions and obtained clarifications from the teachers at "the teaching end" via satellite enabling trainees in class room to daily participate in the discussion. This was a continuation of the use of satellites starting in 1975-76 with SITE (using the US loaned satellite), followed by the France, German 'symphone' spacecraft for the STEP project, later followed by the indigenously built APPLE telecasting news and educational courses of robotics, cyclone and flood relief—all of which led to the use of INSAT series INSAT IA, IB, IC & ID and its multipurposes functioning. On this basis, ISRO states that satellite communication is the only practical means of combatting illiteracy in India whose population will reach 1 billion by the end of the century and 35 per cent of whom, otherswise, will remain illiterate. Certainly satellite technology has proved to be an effective (but not the only) literacy spreading medium. In Tamil Nadu the Women's Association plans to make 3000 women in city slums literate and the government with the help of DANIDA is at work making 90,000 fisherfolk literate.

Technical education

Some 70 polytechnics are being modernised with the help of a World Bank loan over a period of 3 years. The Apparel Export Promotion Council is setting up a training centre to impart skills in knit wear manufacturing, including documentation for improving

productivity and quality and boost exports. With the technical help of SITRA, the first training centre has been started at Tirupura, the other centres being at Madras, Bangalore, Bombay, Delhi, Lucknow, Jaipur, Calcutta, Ludhiana and a centre in UP. Each centre is training 1000 persons in various trades. The Anna University has started a Training Centre for Career Advancement to impart vocational training to the university employees to make them eligible for promotion. Such in service training centres need to be started in all universities. A Rs. 35 crore Forestry Research & Training Institute is being developed by the State Forest Department, with unions and international help, at vandalur adjacent to the zoo with stress on forestry research, eco development research as well as on education and training. This will also bring together the scattered research activities in forestry and ecology in the state.

Science

The National Environmental Engineering Research Institute (NEERI) reports that it has used water hyacinth and Parthenuim to produce two chemicals-butadiol to be used in polyurathene industry and in boosting the octane level of petroleum products, replacing the harmful lead used till now, and ethyl acedtate, an industrial intermediate and hydrogen gas made from parthenium to be used as fuel. The Department of Biotechnology in collabration with TNAU is launching the commercial production of a bio tech product to check crop pests and diseases. For this a meeting was held of the various funding agencies, farm officals from various states, scientists and private entrepreneurs at which the blue print for the project was finalised and an agreement on its production established. Anna University and Carborandum Universal have established a joint programme of research into ceramics technology. ISRO is planning to establish an autonomous corporate front with the Space Department for making available ISRO's space and satellite technology abroad. This will speed up the procedures for sales and ensure the sales proceeds accrued to ISRO and not the government. A recent UK study states that the capital equivalent of the talent exported between in 1967 and 1985 from the developing countres (mainly to the US) was $51 billion, compared to an earlier estimate of $13 billion. India and its 5 ITIs is the major source of this export. On the other hand, these expatriates have placed in the Foreign Currency Non Resident Account which is repatriable a mere Rs. 15,000 crore and have contributed little to the talent needed by the country's industries. The transfer of knowledge through Expatriate Nationals Programme has done little except provide an expanded and upto date data base on the expatriates. One action called for is to remove all subsidise to IITs and similar top scientific institution because those who enroll there are from the well to do and most of them migrate abroad. Industrialised countries are shifting their aid from Mega projects to building scientific infrastructure to develop homegrown technology. These include biotechnology, informatics, material sciences, libraries, data banks, well equipped laboratories and professional societies with access to western research. The problem highighted in the review rings a familiar bell for us in India. "The biggest problem the third world faces is how to develop science in a constant climate of crisis."

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V. Employment and Labour Relations

The employment situation in the country is worsening. The increase in urban and educated unemployment as seen in the Employment Exchange data which records the increase of job seekers from 30,564 million in May 1989 to 33,353 million in May 1990. The Planning Commission also notes that overt unemployment is on the increase even in agriculture and in rural areas with increasing numbers of underemployed declaring themselves unemployed. Despite the advent of modern technology in the manufacturing sector, employment in this sector is stagnating at less than 1 per cent per annum against the 5 per cent employment growth in the unorganised urban sector, where the level of employment is directly proportional to that of education. 40 per cent of the unemployed are education it points out. The Annual Plan for 1991-92 starting on April 1 must take this as its proiorty task. It should be the main thrust of the Eighth Plan when it is finalised.

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VI. Other Items

Mass Action for National Regeneration

There were 4 events connected with this Programme in March. Early in March the Planning Commission in association with the Association of Indian Universities invited 25 vice chancellors and the officers of the Programme. At the meeting, there was general support for the programme and it was decided that the universities and colleges will start by teachers and students spending the summer vacation in the villages and urban slums, each to make 5 or 6 illiterate literate. (This was before the decision to dissolve Parliament and hold elections in May). It was also decided that the universities will follow the example of autonomous colleges and make literacy teaching part of the curricula. The second event was a meeting of the National Committee at UGC when the development since its last meeting in November were reviewed and decisions on registering the society and calling for contributions were made. The third was the meeting of the UGC committee on adult literacy which reviewed the reaction of the students and teachers to the programme and made some adjustments in it. It also reviewed the Ramamurthy Committee report chapter on adult literacy and decided to forward its views to the committee appointed by the president of CABE to look into the report. The fourth event was the meeting of the Madras committee which received with satisfaction the plan of Anna University and the new 3 semester curriculum it has developed incorporating adult literacy in it. The first semester is to start during this summer. In April, the UGC standing committee on Adult Education met, discussed the comments sent by the members on the Adult literacy sectors of the Ramamurthy report and on that basis established UGC's comments on that part of the report. Also in

April, the selection committee of National Institute of Adult Education met, interviewed 23 candidates for the 5 vacant post of Senior Fellows and made recommendations to fill the five posts.

CABE

A meeting of the Central Advisory Board of Education attended by the states ministers of education and educationists reviewed the implementation of the National Policy on Education 1986 and decided to step up the pace of the basic education component—compulsory elementary education plus universalisation of adult literacy. It noted the new initiation in the literacy field, BGVS and the Mass Action for National Regeneration. It set up a committee to the Gnanam report on the management of universities and a 5 man committee to review the Ramamurthy committee recommendations. It requested that the education allocation be stepped up to 6 per cent of GDP as rapidly as possible.

APC for Economic Research and ICRIER

The Asian Pacific Council and ICRIER organised a 3 day workshop on the future of Asian Economies in which economists and planners from all countries from Pakistan in the East to New Zealand in the west, and all the investment agencies—ADB, World Bank, UNDP—participated. It was noted that all the countries from Pakistan to New Zealand with the exception of India had adopted the Bank/IMF structural adjustment programme and were strong defenders of it. India needs to come to terms with this reality.

IIC

There were 2 meetings of the Board of Trustees in March at which a new director Mr. Maheswar Dayal was nominated as from April 1. Unfortunately he died in an accident in Bombay on March 18. And so the Board met again to condole his death and decide on his successor. Meanwhile the present Director has agreed to stay on for a period of 6 months till September. There was the Annual General Body meeting at which the Director Report on the centre's activities during 1990-91 was discussed and the excellent programme recorded was commended. It was noted that the centre is now running at an annual Rs. 3 crore in its action. There was a reception for the chairman, Mr. Singhvi, who was doing to the UK as High Commissioner, at which his high level services for the Centre and its members were underlined. The March Panel discussion of the Economic Affairs Group was on the Budget strategy that has to be followed when the final budget for 1991-92 is presented by the new government. There was agreement that it must address itself to the macro economic imbalances facing the economy. Litigation, mounting public debt, high trade and balance of payments deficits, and foreign exchange reserves running out. Whether this should be done by opening the economy to market forces and foreign investments or improving and strengthening policy of self reliance was debated with the majority favouring the latter. The Centre's Economic Affairs group also organised a good seminar the next day on public debt — internal and external. It noted the very hery high level of the total debt—Rs. 3 lakh crores and the alarming rate at which it was increasing. There was agreement that all measures

must be taken by the budget, plan and the economy to reduce the primary deficit from 4.5 per cent in 1990-91 to 2.5 percent in 1991-92 for which some 10 measures were suggested. There was a meeting to plan the zonal planning seminar for the Eastern and North Eastern zone. It was decided to propose and examine zonal plans for water, communications and ethnic relations for the North East zone and power, industry and agriculture for the Eastern zone. The April panel of the Economic Affairs Group reviewed the question of structure in the economy - the public vrs private sector, the role of the state and NGO's. There was general agreement that the public sector should be reformed and strengthened.

RDI

The quarterly meeting of the Board of Directors of RDI met in March in Bombay at the headquarters. The programme of the company was reviewed and the satisfactory manner in which it was run was noted. The company has now reverted to the status of a privately owned company and from this, certain consequences follow which were noted.

Consumers Forum

There was a meeting in mid march of the Consumers Forum at which the question of the property tax was discussed. It was reviewed in light of the inadequate revenues of the Corporation of Madras and other Municipalities and the increasing demand for their services being made on them by the citizens. It was agreed that the Property tax should be reviewed annually and not quinquennially to take account of inflation and that it should be based on certain norms of which 3 were accepted generally — zoning, use and age. Further it was also agreed that the more optimal exploitation of the property of the Corporation and local authority would add to its resources.

SRC and TNBCE

The foundation stone for the permanent headquarters of the SRC and TNBCE was laid on March 26. The building is financed by a grant of Rs. 5 lakhs from the union government and Rs. 4 lakhs from the state government and should be completed by 1992. The bimonthly meeting of the governing body of SRC was also held on the same day. The Standing Finance Committee was requested to formulate the budget along the usual lines showing the comparative revised estimates for the previous years. The work of the centre was reviewed and found to be sound. The executive committee of TNBCE which also met reviewed the report on 3 projects submitted by the Madras Literacy Committee and expressed its statisfaction with its evaluation. The committee also noted that the programme of literacy through centres was being phased out and the Mass Campaign Approach is being followed. The evaluation of the literacy programmes of the 8 universities involved in it would be examined at the next meeting.

TNSC and S & T

The annual meeting of the Council for the Tamil Nadu State Council for Science

& Technology was held at the end of March. It reviewed the member secretary's report on the activities of the council for the year and suggested that there should be greater emphasis in advising the government and the department on the Science and Technology needs and programmes. The programme for the encouragement of young scientists through travel grants and the programme for the popularisation of science was noted with satisfaction. The decisions of the executive committee on the thrust areas for the council's S & T programme and on the 1991-92 budget were confirmed.

SPC

As noted earlier, there was in April, a meeting of the State Planning Commission at which some decisions on work programme of the commission were taken. The chairman, Mr. Rajendran, has left to take up the post of Secretary, Youth, affairs and Sports in the Ministry of Human Resources, New Delhi. The Adviser Mr. V. Ramachandran has been appointed as the Chairman.

Swaminathan Foundation

The new headquarters for the M. S. Swaminathan Foundation for self renewing Agricultural Development was launched at Taramani with the laying of the foundation. Scientists from the state attended the function. A related function was the 60th birthday celebration of Dr. Seshadri who is giving his talents and resources to applying science and technology for Rural Development.

April Development Seminar

The paper for the April seminar on in Scearch of environmental Sociology by P. Balasubramanian together with a summary of the discussion of the paper at the seminar appears as the first article.

Second article

A note, Census 1990-91, Literacy in Tamil Nadu, appears as the second article

Special section

The survey of the research programmes of the South Indian universities and research institutions, together with a broad analysis of the results of the survey appears as the Special section of this May-June Issue of the Bulletin.

The following resolution on behalf of the faculty, staff and students is being forwarded to Mrs. Sonia Gandhi to condole the death of Mr. Rajiv Rajiv Gandhi, former Prime Minister of India :

We the faculty, staff and students of the Madras Institute of Development Studies, express our deep sorrow and anguish at the assassination of Mr. Rajiv Gandhi. We condemn, in the strongest terms, this vile act. Our heartfelt condolences to you and the members of your family.

3rd June, 1991.

S. Neelakantan
Director.

M I D S News

Dr. Nirmal Sengupta gave a seminar on "Action Research and Experiment" at the Institute on 15th April, 1991.

He also gave two lectures on role of farmers' organisation at Water and Land Management Institute, Anand on 1st May.

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Dr. S. Neelakantan attended the ICSSR Research Institutes' Directors Meeting in Jaipur on 18th and 19th April.

He also inaugurated the 5-day workshop on "Slum Improvement in Public Participation" in the School of Architecture and Planning, Anna University on 22nd April.

He also participated in the Interdisciplinary Research Methodology Workshop, Hyderabad from 5th to 8th June,

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Mr. S. Guhan participated and presented a paper on "State finances of Tamil Nadu" at the seminar on State finances in India organised by the National Institute of Public Finance and Policy and the World Bank at New Delhi on 19th and 20th April.

Dr. Paul Appasamy presented a paper on "Watershed Management in Drought Prone Areas of Tamilnadu" at a Seminar on Water Conservation organised by The Institution of Engineers (India) on 80th April.

He served as a Panel Member at a *Workshop on Slum Improvement* at School of Planning and Architecture, Anna University on 26th April.

He participated in the Interdisciplinary Research Methodology Workshop, Hyderabad from 5th to 8th June.

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Dr. A. Vaidyanathan delivered the Purushothamdas Thakurdas Memorial lecture 1990 in Bombay, April 1991.

He delivered the Foundation day lecture of the Society for Promotion of Wasteland development, in New Delhi, May 1991.

He also initiated discussion on "Search for Alternative Paradigms in Development" organised by the India Internaional Centre, New Delhi, May 1991.

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Dr. R. Hema attended the Interdisciplinary Research Methodology Workshop on "Renewable Energy" at Hyderabad organised between 5th and 8th June, 1991. She was Discussant for three papers.

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The annual meeting of Ph.D. Scholars and Guides was held from 23rd to 26th April, 1991. It was attended by 40 Ph.D.Scholars from different parts of the State and neighbouring states. In addition, 8 recognised Ph.D. Guides from various universities and colleges of Tamilnadu also participated.

The resource persons were Prof. Abdul Aziz, ISEC, Bangalore and Prof. A.M. Nallagoundan, Retired Professor of Econometrics, University of Madras. Prof. Aziz lectured on "Issues in Decentralised Planning : Data and Methods". Prof. Nallagoundan gave two lectures—"Investment in Education" and "Investment in Health".

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A three-member Chinese delegation from Chinese Academy of Social Sciences visited our Institute and discussed with the faculty on "Income Distribution, Growth and Development" on 10th May.

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The annual Interdisciplinary Research Methodology Workshop was held at the National Institute of Rural Development, Hyderabad from 5th to 8th June, 1991 and was attended by 24 participants. This workshop was the third in the series on Management of Renewable Resources" and had as its theme, the Management of renewable energy resources. Prof. Malcolm S. Adiseshiah inaugurated the workshop. Thirteen papers were presented at the workshop. The topics discussed at the workshop included Availability of Rural Energy Sources, Emerging Technologies (of Renewable Energy), Implementation of Renewable Energy Programme and Energy Flows in the Rural Eco System and in Agriculture. The papers and proceedings will be published in due course.

In Search of Environmental Sociology

by

Dr. K. Balasubramanian
R and D Manager, INDO Swedish Forestry Coordination Programme, Madras.

Introduction

The field of environmental sociology as a distinct area of inquiry, is based on certain premises which need substantial clarification. This discussion paper is an attempt in analysing the framework of environmental sociology vis-a-vis the existing theories.

Two American sociologists, Dunlap and Catton are responsible for building a base for environment sociology. Their pioneering work in American Sociologist and Annual Review of Sociology (Catton and Dunlap 1978a, Dunlap and Catton 1979) created an interest in the subject for they questioned the basic tenets of Sociology and their relevance in the emergence of new knowledge such as environmental sociology. Their argument is based on two important factors :

— Sociology is anthropocentric

— Physical environment has very little emphasis in Sociology

The literature on environmental issues is divided into two categories. The Sociology of environmental issues and environmental sociology. The first category refers to the environmental related phenomena which were analysed in the traditional sociological perspective and the second category is defined by "the field of inquiry that emphasised the importance of the physical environment in influencing (or influenced by) Social behaviour" (1979:255).

According to Dunlap and Cartel (1979) the traditional Sociology is incapable of perceiving the dimensons of environmental issues since traditional Sociology operates within a 'social' framework. This, according to the authors, is due to Durkhiem whose sui generis concep-

tion of social facts has resulted in a narrow cause-effect relationship. This anthropocentric approach discourages the explanation of a social phenomena by means of physical or nonsocial factors. Dunlap and Cartel argue that in traditional Sociology the concept of 'environment' is referred to the social environment and indicates the social and cultural influences upon behaviour. The role of physical environment is given a low priority in social explanations. Hence they seek a reappraisal of 'widely held sociological - domain assumptions' by evolving a paradigmatic analysis.

New Paradigms and Traditional Sociology

The Sociology of environmental issues which is steeped on the assumptions of traditional Sociology with implicit world view is referred to as Human Exemptionalism Paradigm (HEP). The core of the environmental sociology is the New Environmental Paradigm (NEP). The Human Exemptionalism Paradigm is so called since it assumes that humans are exempted from the ecological principles due to certain exceptional characteristics such as culture, technology, language, social organizations etc,. On the other hand the New Environmental Paradigm rests on the assumptions of the eco-system dependence of human society.

Dunlap and Catton (1979) categorise the human ecology school within the H E P since it is based on the traditional sociological assumptions. They believe that human ecology has failed to look into the role of social organizations in enabling the population to adopt to their environment. Thus the absence of the emphasis on physical environment differentiates the sociological human ecology with Environmental Sociology. Buttel (1987) in his review on Environmental Sociology has formulated the differences based on the arguments of Dunlap and Catton (1980:34) in Table 1.

Their arguement find similiarities in most of the existing theories, in their anthropocentric approach. They point out that "the numerously competing theoretical perceptives in contemporary sociology - e.g., functionalism, conflict theories, Marxism, and so on - are prone to exaggerate their differences from one another" and the apparent diversity in these theories "is not as important as the fundamental anthropocentrism underlying all of them (1978 : 42).

Traditional Sociology and Environment.

The assumptions of human Exemptionalism paradigm seem to have certain misinterpretation about the existing sociological theories. A perusal of the history of sociological thought show that the physical environment has been all along an important component in many theories. Also in HEP there is lack of sufficient emphasis on the role of social anrhropology due to an inherent western bias which defines the subject as a matter of tribal and peasant studies. In this process there is a tendency to overlook the fact that the theoretical base for sociology and social anthropology are the same and if at all there are differences they could be only due to scale and methodology. Social anthropology has encouraged studies in the relationship between physical

environment and society, throwing up a number of theoretical models. This discussion paper will try to trace the development of major sociological theories in relation to environment. The two categories of theories considered are; structural - functionalism and conflict theories.

The ninteenth century sociology had certain inferiority complex vis-a-vis the other branches of science. The complexity of the society evaded a cause-effect schema and in a desperate process of a positivist theory building, certain variables attained a 'determinist' status. One of such important variables is environment which, under the guise of geographical factors, dominated sociology for a substantial period. During this period it was considered that social process emerge from the actions of external phenomena. Those who propogated the cause of geographical determinism were categorised as environmentalist. 'Environmentalism' refers to "explanatory schemes which maintain that human, social and cultural behaviour is to a large extent determined in a mechanist fashion, by the natural habitat" (Ellen 1982:1). Climate, topograpny and other related factors became the explanatory variables for cultural diversity. In this process the cause-effect scheme was stretched to preposterous limits. Huntington tried to theorise that most 'superior' forms of religions were to be found in temperate zones. This form of 'environmental extremism' came for a sharp criticism from Le Roy Ladurie who sarcastically remarked.

"Huntington explained the Mongol migrations by the fluctuations in rainfall and barometric pressure in the arid zones of Central Asia. Brooks carried on the good work by basing a graph of rainfall in Central Asia on the migrations of the Mangols the first extrapolated from barometer to Mangols, and the second, with even less justification from the Mangols to the barometer. What better example of a serpent biting its own tail?', (1972:17).

Extreme views on environmentalism are found in the works of Victor Cousin who believed that social structure could be diciphered from a map, like interpreting contours (Spate 1968.93). Evolutionism and social Darwinism further added strength to environmentalism. Other 'determinant' variables like psychological deductionsm' biological determinism (which in combination with geographical determinism influenced the human ecology school) set a conflicting trend in sociology and it was Durkheim who tried to steer away sociology from environmental and psychological determinism.

Duekheim though influenced by evolutionism, rejected the geographical determinism and psychological reductionism as explanatory variables for socialogy. Duekheim treated sociology as a study. of social facts' the nature of which is determined in its subject matter. [illegible] is work "the Rules of the sociological Method" (1950) he stressed the need for explaining a social fact with a social fact and in this process Durkheim believed that social behaviour could be analysed with social theories. The important charecteristic of social facts is that they are external to any individual but influence the social behaviour. Such an approach according to Dunlap and Catton (1979) has weakened the explanatory process to any external phenomena and this weakness according to them has pervaded all subsequent theories.

Durkheim's methodolgy was a response to certain explanatory extremisms and in this process it is true that physical environment lost its importance in explaining the society. Though his approach has a strong influence in Sociology it may not be appropriate to argue that external phenomena do not find a place in traditional sociological theories.

Structural-functionalism and Environment

One of the important theories of Sociology, Structural-functionalism has its foundations in Durkheim and Weber. It views social pattern as serving to stabilize and maintain groups and members. It assumes that order is dominant in society and social arrangement arise and persist to maintain the society at equilibrium.

Functionalism gained strength through the works of sociologists and anthropologists like Durkheim, Malinowski, Radcliffe—Brown It was Talcott Parsons who shaped the structural — functional school for the twentieth century. For Parsons the social world is viewed in terms of people's ideas, particularly norms and values. Norms are socially accepted rules for actions and values are the belief about the world (1951). The social process is viewed as a system of communication of meanings. Parsons tried to visualise the organisation of individual action into a system of actions and emphasis was laid on stability and social order. According to him the analysis of social action is an attempt to answer the issues of social order. In his work 'The Structure of Social Actions' (1949) Parsons characterises human beings as "making choices about deciding between different goals and means to achieve them" (Craib 1984 : 40). He tried to develop a model comprising of the actor vis-a-vis the range of means. The choice of means and the choice of goals, according to Parsons are made within the framework of environment. In Parson's view the environment has physical and social component which restrict the range of choices. Thus Parson's social world consists of actors, means, goals, and an environment which consists of physical and social objects. The social objects reflect the norms and values which influence a system of 'status roles', the expectations of behaviour. Parsons treats society as network of status and roles each governed by established norms and values. Parsons analysis of the society as a system is based on three presuppositions. It presupposes an actor who aims for maximum gratification (i.e. personality system), it presupposes as far as society as whole is concerned a system of wider values which give coherence to different status roles (i.e. cultural system); and it presupposes a physical environment to which society must adapt (i.e. biological organism)" (Craib, 1984 : 42).

Parsons further argues that for any system to survive certain requirements are to be met. These functional prerequisite are : -

1) adaptation which emphasise the need for adaptation of any system with its environment.
2) goal attainment, which refers to the means available for resource mobilization for achieving the desired goals.
3) integration, which specified the internal coordination of the part of a system.
4) pattern maintenance, which refers to the stability and the state of equilibrium.

Table . I

A comparison of major assumptions in sociology's Human Exemptionalism Paradigm and the New Ecological Paradigm (Buttel 1987)*

Assumption	Human Exemptionalism Paradigm (HEP)	New Ecological Paradigm (NEP)
Assumptions about the nature of human beings	Humans have cultural heritage in addition to (and distinct from) their genetic inheritance, and thus are quite unlike all other animal species.	While humans have exceptional characteristics (culture, technology, etc.) they remain one among many species that are interdependently involved in the global ecosystem.
Assumptions about the social causation	Social and cultural factors (including technology) are the major determinants of human affairs	Human affairs are influenced not only by social and cultural factors, but also by intricate linkages of cause, effect, and feedback in the web of nature ; thus purposive human actions have many unintended consequences.
Assumptions about the context of human society	Social and cultural environments are the crucial context for human affairs, and the biophysical environment is largely irrelevant	Humans live in and are dependent upon a finite biophysical environment which imposes potent physical and biological restraints on human affairs.
Assumptions obout the constraints on human society	Culture is cumulative : thus techonological and social progress can continue indefinitely, making all social problems ultimately soluble	Although the inventiveness of humans and the powers derived therefrom may seem for a while to extend carrying capacity limits, ecological laws cannot be repealed.

*The above table is a modified version of the original table of Buttel (1987:470)

Structural functionalism has been of great influence in sociological works of Kingsley Davis, Robert Merton etc,. The theoretical structure of the structural functionalism has many weaknesses and has been a subject for rigorous criticisms. Its teleological explanation, emphasis on order and its failure to treat conflict as an important variable have made structural—functionalism more defensive. But accussing one of the important theories of traditional sociology for overlooking environment seems to be far fetched. The presuppositions and functional prerequisites clearly argue for an adaptation with the physical environment for the survival of any system.

Social anthropology has contributed substantially in the man environment relationship in a functional framework. The influence of environmentalism had an impact on the study of ecological relationships. But it drew lot of criticism and it was argued that the "approach was basically mechanistic, concerned with simple unidirectional causation and admiting little (if any) scope for dialectical relationship between historical and material factors" (Ellen, 1982 : 3). Many studies have shown that what was previously regarded as environmentally determined behaviour is more likely to be a function of social factors well within the limits imposed by the environment" (Ellen, 1982 : 4).

Such views set a theoretical argument which treated environment not as a determinist factor but as a limitation factor. This reorientation of environment had a deep impact in many tribal and peasant studies. Possibilism as a theoretic l framework introduced new concepts like limiting factor, the carrying capacity of the environment etc., Kroeber (1939) clearly set for the views of Possibilism. He opines that "no culture is wholly intelligible without reference to the noncultural or so called environmental factors with which it is in relation and which condition it..." (1939 : 205). He further argues that the interaction of the culture and environment takes place at different level with varying intensity. In his view environment is incapable of explaining culture, since distinct culture, persists in identical environment. However he has clearly emphasised the limitational effect of environmental resources on culture. Darryl Forde is another anthropologist who tried to look environmental relation within the framework of Possibilism. The internal and the external functional relation of particular society, the role of technological innovation and social change, according to Forde, have significance in altering the impact of environment variables (Forde, 1934).

While Possibilism looked into the role of environment as a limiting factor, it did not stress the adaptive process. Its particularistic nature did not allow any scope for theory building. A new school of thought came into picture through Steward (1936) which tried to refine possibilism into Cultural Ecology. Cultural Ecology refers to the "study of adaptive process by which human societies and cultures adjust through subsistence pattern to a given environment" (Ellen (1982:53). Cultural Ecology claims that similarities in social organisations are functionally and causally influenced by similar combinations of environment and technology. Steward treated the culture—environment interaction as an incremental process. His analysis was not a simple correlation between societies and environment but an emphasis on functional relationship between social factors and environmental variables (Ellen 982).

Steward developed the concept of 'Cultural Core' to denote those variable which closely interact with environment and which are significant for particular population. Through the differenciation in the cultural core and in the degree of interaction Steward made an attempt to explain the evaluation of simpler or different institutions (1955).

The human ecology rests on a eco-system approach. While earlier schools defined environment purely on geographical factors, human ecology tried to understand the man environmental relation from animal and plant ecology also.

Its stress was on 'holism' for perceiving the specific relationship between human and their environment vis-a-vis the properties of system organisation such as structure, equilibrium, change, stability and functional mechanisms. Based on the human ecology principle, sociology department of Chicago University evolved the social ecology model. However, the development of this model in its later stages was devoid of physical environment. As Dunlap and Catton (1982) point out that the spatial sociology of the Chicago school's interpetation of environment is based on social factors.

Certain theories of social change within the structural framework do consider environment in describing social change. Moore (1974) identifies 'the ubiquity of the environmental challenges' as one of the (universal source of changes in this system). He argues that the imperfect adjustment between culture and environment results in strain and innovations which inturn induce social change.

Apart from structural-functionalism, the other schools of traditional sociology such as Symbolic Interactionism, Behavioural exchange theories etc., could be accused of lack of any assumptions about environment but that does not imply that they fall under Human Exemptionalism Paradigm. Durkheim did emphasize the role of social facts, but that was a reaction to the crude environmental determinism of the nineteenth century. The later sociologist though influenced by Durkheim, operated within the framework of physical environment.

Conflict Theories and Environment

In the contemporary sociology there is an attempt to classify structural functionalism and conflict theories as two different models based on mutually exclusive assumptions (Craib, 1982 : 101). The conflict theories reject the concepts of concensus, integration and order in explaining the social phenomena and emphasize conflict as a analytical tool for evolving sociological explanation. Marxism is one of the important theoritical framework in conflict theories though there are some neo-Weberian models also.

Marxist theories are explicit about their assumption of physical environment. Marx considered the regular exchange of matter between man and nature as the law regulating social production. He emphasized the importance of this exchange in sustaining human life. Though the marxist theory points out that "Biological, physical and other movements existing in the society environment interaction are ultimately governed in one way or other by a specific activity peculiar to people..."(Faddeev-1983:101). Marx argues for the rational regulation

of the interchange of nature through socialised man. The environmental issues and ecological crisis according to the Marxist theories are manifested in the antagonistic characteristics of the capitalists society and in the imbalances in the development of productive forces.

The interpretations and the misinterpretations of the social control over nature seems to have led the categorization of Marxism under human Ecological Paradigm by Dunlap and Catton (1979). Marxist theories have never tried to strech the limits of nature. Ellen states that neither Marx nor Engels "insisted on the infinite capacity of humanity confronted with nature" (1982:3). Marx and Engels clearly argued that society and environment cannot exist in isolation. Engels cautions "Let us not flatter ourselves over much on account of our human victory over nature for each such victory nature takes its revenge on us. Each victory, it is true in the first place brings about the results we expected, but in the second and third places it has quite different, unforeseen effects which only too often cancel the first" (1974:180). An analysis of some studies with Marxist and neo-Marxist framework shows the environmental framework of the Marxist theories. Schnaiberg is one of the important figure in the contemporary environment sociology and his work on man environmental relation has stimulated research on the political economy of the environment.

Schnaiberg (whose works Dunlap and Catton categorise under New Ecological Paradigm) argues that ecological systems and human systems are to be understood through different concepts since they have qualitatively different dynamics (1980:19). He analyses the contemporary American society in this context and finds a reciprocal relationship between social structure, social change and environment. His work on 'the environment' (1980) begins with an explanation of the eco-system and the rules which sets the limit for the eco-system. He then proceeds to describe the departure in the socio cultural productive system. According to him" All socio, cultural productions involves withdrawals from and additions to eco-system. However societies differ in the volumes of withdrawals and additions... (1980:413). In this process industrialisation has increased the impacts on environment in a differential rate and according to Schnaiberg the differences are due to various forms of control over socio, cultural production. He departs from traditional Marxism when he opines that "Socialism has maximized social control of production and hence potentially the ecological impact of production"(1980:42), Nevertheless, he feels that the potential for an ecological synthesis is greater in the socialist societies due to its social and political structure and "level of the physical capital that produce enormous eco-system withdrawals and additions" (1980:438).

The capital intensive production through monopoly capitalism according to Schnaiberg has resulted in a treadmill of production. The selling of labour to satisfy the consumption needs, the competition to remain the monopoly capital and the resultant expansion of consumers constitute the process of treadmill of production. "Increasing the speed of this threadmill involves increased environmental withdrawals and additions" (1980 : 230). Schnaiberg feels that the treadmill production has contributed for the environmental degradation in capitalist societies and calls for more control

of state over production, appropriate technologies and increased surplus share to labour to minimize the environmental degradation.

Ragunandan (1986) traces the man—environmental relationship in a historical perspective. While Schnaiberg argues his case on the basis of capitalist-industrial society, Ragunandan traces the environmental problem in the pre - industrial societies also. Though his views agree with Schnaiberg on the impact of production process on ecology he opines that the environmental and social diseqilibrium are not "the intrinsic property of modernity or capitalism alone but of class society in general" (1986-545). Ragunandan considers 'modernisation as a cause for disturbed ecology', a partial view. The pre-industrial economy according to him was not a subsistence economy, but based on the "motivation of production for the dominant classes and the subsistence for the dominated..." (1986 : 546). He locates the problem of environment in the specific mode of production and production relation and argues that the "subject of discourse on ecology, must as with other social problems, be the structure of the global system, continuous struggle of the oppressed classes to over throw and the relationship of these struggles to those over natural resources in specific locales," (1986 : 546).

In contrast to Schnaiberg's and Ragunandan's macro level environmental analysis, Blaike (1985) looks into the specific issue of soil conservation in developing countries through a political economy approach and analyses the causes for the failures of the programmes. His studies have resulted in the conclusion that soil erosion "in developed countries will not be substantially reduced unless it seriously threatens accumulation possibility for the dominant classes" (1985 : 147).

However, the dominant classes feel least about the effects of soil erosion and hence no mobilisation takes place on this issue. He further argues that small-scale land users are responsible for soil erosion due to social relationship involving surplus extraction. According to him the conservation and the subsistence economy do not go together and the state's intervention in this issue fails since it lacks a broader understanding of soil erosion as a consequence of structure to the society.

Attempts have been made to trace historically the evolution of environmental policies and their impact on the environment and society (Guha 1983, Shiva 1989), Engels reflects the importance of environment in Marxists theories when he says "...at every step we are reminded that we by no means rule over nature like a conqueror over a foreign people like some one standing outside nature-but that we, with flesh, blood and brain belong to nature and exist in its midst, and that all our mastery of it consists in the fact that we have the advantage over all other creatures of being able to learn its laws and apply them correctly" (1974:180). However, the essence of the Marxist argument is that the issues on environment cannot be perceived on the limitations of the environment alone but in a broader understanding of the social dynamics in relation to nature.

Environmental Consciousness and Movements

The cognitive aspect of environment and the theoritical significance of human

interpretation on environment is yet to be tackled in a full length in sociological literature. "The impact of the capacity and limitation of Homo sapiens in interpreting the environment, handling information in complex ways and using information in the direct behaviour" has not been fully appreciated (Ellen 1982:132). This is particularly in the case of non-conflict theories such as structural functionalism. Very few anthropologist like Rapaport (1968) has attempted to examine the relationship between perceived and objective environment.

On the other hand Marxist school has made some attempts to look into the perceived environment since the theory itself has strong conceptual base of 'consciousness'. In the recent Marxist literature arguments are found regarding the relationship between envitonmental consciousness, class consciousness and the emergence of environmental movements. Ragunandan opines that ecological conciousness is "dependant upon relation of production and degree of social control over production..." (1986:547). He describes the trans-historic views by arguing that ecological consciousness is "an inherent characteristic of pre-industrial society is an historical inversion" (1986:547). According to him the ecological consciousness in traditional societies is derived out of issues based on the problems of the subsistence economy. Schnaiberg discusses about the lack of environment conciousness among the labour force due to its consumption needs.

The ecological consciousness and the impact on the environmental movement is another important area for sociology. The functionalist school analyses the environmental movement in terms of strain, stress and deviations in the man-environmental relationship. For structural functionalism the location of stress that gives rise to environmental movement is an important task (Sindbach 1980:29). The conflict theories tend to classify the environmental movements based on the broader understanding of the social relation of production. For instance, Schnaiberg classifies the environmental movements into four categories, cosmatologist meliorists, reformists and radicals. The first two group emphasises on the consumption issues while the last groups. identifies the problem as a product of nature of production. Schnaiberg analyses the transition of environment movement and the class composition of the movement in terms of the above four categories (1980:362-411).

The analysis of Bandhopadyaya and Shiva (1988) on the political economy of the environment movement is based on the dependant theory. Their argument rests on the assumption that delinking the environmental resoures from the traditional local level village economy and relating them more to national and international economy has resulted in environmental strain. Bandhopadyaya views environmental movements as a reaction to this strain. Ragunandan argues that all such movements are not ecological but are based on the "perception regarding the use of and control over natural resources the immediate environment" (1986:548). These movements according to Ragunandan lack macro ecological perspective and conception of production relations. Frank and Feunts (1987) feel that new social movements such as environmental movements when compared to 'classical' class movements are in a better position

to mobilise people since they are in response to social needs.

Overview

Sociology is essentially anthropocentric for it examines the human phenomena in relation to the social milieu. The specialised sociologies attempt to evolve explanations on specific fields but within the overall framework of sociology. Sufficient scope exists in sociology for explanation with non-human factors. But any attempt for deterministic explanation particulary with non-human factors is resisted. Environment sociology as a specialized field probes into the manner in which human phenomena is related to environment in a social milieu.

The Human Exemptionalism Paradigm tries to characterize the traditional sociology with certain assumptions and such assumptions are considered as misfit for environmental sociology. But a perusal of major theories and studies of traditional sociology shows that most of them consist of the components of New Ecological Paradigm. Very few sociological theories claim superior qualities of culture and technology over the environment. Infact the emphasis is always on adaptation with environment. The relationship between society and environment is treated as a function of the goals which the society pursues, The goals need not be uniform for some societies could treat environment as unlimited resource for exploitation and certain other societies could treat environment with due respect. The essence of environmental sociology lies in identifying the structure, function and the process of these goals.

What sociology lacks is not appropriate theoretical assumptions but lack of proper emphasis and methodologies to examine the assumptions. Many sociologists seem to have taken the assumption of adaptation for granted and the few attempts refer only to simple societies.

Hence environment sociology offers a challenging task to study the complex and industrialised societies in structural functionalist approach as well as in Marxist perspective. Structural-functionalism and other non-conflict theories have scope to analyse the transformation of simple societies to complex system in relation to environment. Through culture, they could probe the changes in the cognitive aspect of the society and identify the process through which the society understands the carrying capacity and the limitation factors of environment. The views of Ragunandan (1986) provides areas of analysis in Marxist perspective, particularly in ecological consciousness vis-a-vis the class consciousness. Another important area for Marxist analysis is the differences in the ecological issues between peasant economy and industrial society and the characteristic of the resultant environmental movements.

The development of a new field of inquiry requires much broader understanding of the existing theories and not misplaced assumptions.

REFERENCES

BANDYOPADHYAY, J and SHIVA, V. 1988. Political Economy of Ecology movements. **Economic and Political Weekly.** XXIII No. 24 : 1223-1232.

BLAIKE, P. 1985. **The Political Economy of Soil Erosion in Developing Countries.** London : Longman

BUTTEL, F.H. 1987. New directions in environmental sociology. **Annual Review of Sociology.** 13 : 465-88

CATTON, W.R.Jr., and DUNLAP, R.E. 1978 a. Environmental Sociology : A new Paradigm. **American Sociologist.** 13 : 41-49

CATTON, W. R. Jr., and DUNLAP, B.E. 1978. b. Paradigms, theories and the primacy of the HEP-NEP distinction. **American Sociologist.** 13 : 256-59

CATTON, W. R. Jr., and DUNLAP, B.E. 1980. A new ecological paradigm for post-exulerant sociology. American Behavioural Sciences. 24 : 15-47

CRAIB, I. 1984. Modern Social Theory Newyork : Harvester Wheatsheaf

DUNLAP, R. E. and CATTON, W. R. Jr. 1979. Environmental Sociology. **Annual Review of Sociology.** 5:243-73

DURKHEIM, E. 1950. **The Rules of the Sociological Method** (trans. S. A. Solovay and J.H. Mueller) Chicago : Chicogo University Press

ELLEN, R. 1982. **Environment, subsistence and system.** Cambridge : Cambridge University Press,

ENGLES, F. 1974. **Dialectics of Nature-Moscow :** Progress Publishers.

FADDEEV, E. T. 1983. **The Problem of Ecological Production.** A. D. Ursul (ed.) Philosophical and the ecological problems of civilisation (trans. H. C. Creighton) Moscow : Progress Publishers.

FORDE, C. D. 1934. **Habitat, economy and society.** London : Methuen

FRANK, A. G. and FUENTES. 1987. Nine theses on Social Movements. **Economic and Political Weekly** XXII No. 35 : 1503-1510

GUHA, R. 1983. **Forestry in** British and Post-British India, **Economic and Political Weekly** XIII.

HUNTINGTON, E, 1924. **Civilization and climate.** New Haven : Yale University Press

KROEBER, A. L. 1939 **Cultural and natural areas of native North America,** Berkeley : University of California Press.

LE ROY LADURIE, E. 1972. Times of feast, times of famine : a history of climate since the year (trans. Barbara Bray) London : Allenand.

PARSONS, T. 1949. **The Structure of the Social Action,** Newyork : The Free Press.

PARSONS, T. 1951. **The Social System** Newyork : The Free Press.

RAGUNANDAN, D. 1986. Ecology and consciousness, **Economic and Political Weekly.** XXII : 545-549

RAPAPORT, R. A. 1968. **Pigs for the ancestors : ritual in ecology of New Guinea people,** New Havan and Londen : Yale University Press.

SANDBACH, F. 1980. **Environment Ideology & Policy,** Oxford : Basil Balckwell.

SCHNAIBERG A. 1980. **The Environment** NewYork : Oxford University Press.

SHIVA, V. 1989. **The Voilence of the Green Revolution.** Dehradun : Research Foundations for Science and Ecology.

SPATE, O.H.K. 1968. Environmentalism **In International Encyclopedia of the Social Sciences** 5, 93-7

STEWARD, J. 1936. The economic and Social basis of primitive bands. **In Essays on anthropology of Alfred Luis Kroeber,** R.H. Loure (ed.) Berkeley : University of California Press.

1955. The theory of cultural change. Urfana : University of Illinois Press.

Summary of Discussion

Dr. Balasubramaniyan presented a paper on "In search of environmental sociology." His main focus was on the existing theories, such as traditional sociological perspective and physical environmental sociology".

The literature on environmental issues is divided into two categories. The sociology of environmental issues and environmental sociology. The first category refers to the environmental related phenomena which were analysed in the traditional sociological perspective and the second category is defined by the field of inquiry that emphasised the importance of the physical environment in influencing social behaviour.

The author pointed out that sociology is essentially anthropocentic for it examines the human phenomenon in relation to the social milieu. Sufficient scope also exists in sociology for explanation with non-human factors. But any attempt for deterministic explanation particularly with non-human factors is resisted. Environment sociology as a specialized field probes into the manner in which human phenomena is related to environment in a social milieu. The human exemptionalism paradigm tries to characterise the traditional sociology with certain assumption and such assumption are considered as misfit for environmental sociology.

Finally, the essence of environmental sociology lies identifying the structure, function and the process of these goals. Structural functionalism and the non-conflict theories have scope to analyse the transformation of simple societies to complex system in relation to environment.

After the presentation, one of the participants wanted to know how to solve the environmental problem. The author was of the opinion that the only way is that the local people take up the problem and such movement can develop into a National Movement to solve the problem in the overall way. Dr. D. Sundaram chaired the seminar.

18—5—91 P. Anbazhagan

Census 1991*

Literacy in Tamil Nadu: Some Progress But A Long Way To Go

The first and rather slim volume of the 1991 Census series for Tamil Nadu (Census of India 1991, Series 23, Paper-1 of 1991) contains useful material on literacy. Of particular interest are the data on inter-district variations in the ratio of literates to population for each of the three categories: persons, males and females. A comparison of the data with those for 1981 provides additional insights, and enables one to make a preliminary assessment of the literacy situation in the State.

During the period 1988-1991, the rate of growth of literacy in the State as a whole, while far from being spectacular has however been slightly above the all-India average. Thus the state's proportion of literates to the population in the age group 7 years and older grew by 9.34 percentage points between 1981, while the corresponding figure for India was 8.55 percentage points. Only three states - Haryana, Karnataka and Andhra Pradesh—did better than Tamil Nadu in this regard.

Table 1 presents data on the proportion of literates to total population, districtwise, for persons, males and females in 1981 and 1991.

*A note by Dr V. B. Athreya, Professor of Economics, Bharathidasan University, Tiruchirapalli.

TABLE—I

Percentage of Literates to Total Population, Tamil Nadu 1981 and 1991

State/District	1981 Persons	1981 Males	1981 Females	1991 Persons	1991 Males	1991 Females
Tamil Nadu	46.8	58.3	35.0	54.61	64.02	44.91
Madras	68.4	75.6	60.7	72.54	77.59	67.12
Chengai Anna	48.0	59.7	35.6	57.45	66.66	47.82
South Arcot	36.8	49.4	23.8	45.76	56.88	34.26
North Arcot*	40.9	53.5	28.0	49.54	60.12	38.79
Dharmapuri	29.0	39.0	18.6	39.83	48.38	30.74
Salem	39.5	50.0	28.1	47.59	56.80	37.70
Periyar	39.8	51.8	27.3	48.72	59.05	37.97
Coimbatore	53.1	64.4	41.6	60.80	68.46	52.38
Nilgiris	56.5	67.7	44.8	63.78	72.55	54.89
Madurai	50.6	62.4	38.5	53.25	63.38	42.84
Dindigul Quaid-E Milleth	41.2	53.8	28.3	50.38	60.99	39.48
Tiruchirapalli	45.6	58.4	32.6	53.74	64.47	42.84
Thanjavur	50.4	62.6	37.9	57.64	67.42	47.82
Pudukottai	38.7	53.6	23.9	50.03	62.21	37.91
Ramanathapuram	42.8	56.3	29.8	52.46	63.46	41.67
Pasumpon	44.7	59.2	30.8	55.01	67.26	43.11
Kamarajar	47.7	60.7	34.7	54.86	65.77	43.80
Chidambaranar	56.1	65.6	47.1	63.20	70.70	56.04
Nellai Kattabomman	49.7	61.9	38.0	56.53	66.51	46.89
Kanyakumari	63.9	68.6	59.1	72.14	75.33	68.93
Range (Maximum minus Minimum)	39.4	36.6	42.1	32.71	29.21	38.19
Coefficient of Variation	0.20	0.139	0.311	0.149	0.105	0.219

* The figures for North Arcot for the year 1991 have been arrived at by dividing the combined literate population of North Arcot—Ambedkar and Thiruvannamalai—Sambuvaroyar districts by their combined total population.

Source : (1) Census of India 1991, Series-23, Tamil Nadu, paper 1 of 1991.

(2) Tamil Nadu-An economic Appraisal, 1986-87. (Government of Tamil Nadu, Madras).

Note : For literates in 1981, the reference group was the population aged 5 years and above, while in 1991 it was those 7 years and above. But this would not make any major difference to the comparisons across districts/gender.

Several important point emerge from a careful scrutiny of the data in Table 1. First, every district has recorded improvement in what may be called the 'literacy ratio"- proportion of literates to total population — in the case of both males and females. Second, the gap in literacy ratio between districts has narrowed. A simple measure of the gap is the 'range', defined as the difference between the maximum and miniumun values. As can be seen from Table 1, this has declined between 1981 and 1991 in every category — persons, male and females. A more comprehensive measure of inter-district variation which does not rely only on two values, maximum and minimum, but uses all the available information, is the 'coefficient of variation' which expresses a specially defined average magnitude of deviation of individual district values from the average for all districts as a proportion of this average. This coefficient of variation has also declined between 1981 and 1991 as can be seen from the last row of Table-1. The reduction in inter—district variation in literacy ratio, together with the increase in literacy ratios for males and females in every district, certainly constitute encouraging news. Within this broad picture, performance does ofcourse vary between districts. The "best performances," in terms of improvement in the ratio of literates to population, are by two districts which in both official classification and popular imagination—as well as by several objective criteria—are regarded as backward districts : Pudukottai and Dharmapuri. The highest increase in male literacy ratio between 1981 and 1991 has been recorded by Dharmapuri district, and that in the case of females as well as persons by Pudukottai district. The most dismal performance is that of Madurai district where the literacy ratio has increased by only 2.65 percentage points If one takes into account the fact that some proportion of persons in the age group 5-6 years were recorded as literates in 1981 and none so recorded in 1991, the picture in Madurai is clearly one of stark stagnation or perhaps even retrogression.

Gender Gap

An encouraging feature of the 1991 literacy figures is a decline in the gap between males and females. This is brought out in Table 2 which presents the gap in the ratio of literates to population as between males and females in 1981 and 1991, and the change in the gap, 1981-1991.

TABLE—2

Male-Female Literacy Differentials, Percentage Points, Tamil Nadu 1981 & 1991

State/ District.	1981	1991	Increase (+) or Decrease (—)
Tamil Nadu	23.30	19.10	— 4.2
Madras	14.90	10.47	— 4.43
Chengai-Anna	24.10	1.884	— 5.26
North Arcot	25.50	21.33	— 4.17
Dharmapuri	20.40	17.64	— 2.76
South Arcot	25.60	22.62	— 2.98
Salem	22.10	19.10	— 3 00
Periyar	24.50	21.08	— 3.42
Coimbatore	22.50	16.08	— 6.42
Nilgiris	22.90	17.66	— 5.24
Madurai	23.90	20.54	— 3.36
Dindigul Quaid-E Milleth	25.50	21.51	— 3.99
Tiruchirapalli	25.80	21.63	— 4.17
Thanjavur	24.70	19.60	— 5.10
Pudukotai	29.70	24.30	— 5.40
Ramanathapuram	26.50	21.69	— 4.81
Pasumpon	28.40	24.15	— 4.25
Kamarajar	26.00	21.88	— 4.12
Chidambaranar	18.50	14.66	— 3.84
Nellai-Kattabomman	23.90	19.62	— 4.28
Kanyakumari	9.50	6.40	— 3.10
Range (Maximum minus Minimum)	20.2	17.90	

SOURCE: (1) Census of India 1991, Series-23, Tamil Nadu, paper 1 of 1991

(2) Tamil Nadu—An Economic Appraisal, 1986-87. (Government of Tamil Nadu, Madras)

The gender gap has decreased in all districts. The variation across districts in respect of the gender gap has also decreased, as can be seen from the last row of Table 2.

What all this adds up to is a slow process of homogenisation under way in the State as far as literacy is concerned. That it is a slow process needs to be underlined since literacy rates still vary considerably, both across space (districts) and across gender.

Next, it would be interesting to know whether there is any association between the literacy ratio and the gender gap in this ratio. Table 3 presents the rankings of districts in 1991 in terms of two variables : ratio of literates to population (persons) and the difference in this ratio between males and females.

TABLE — III

Rankings in terms of Literacy ratio and Literacy Gap, Tamil Nadu Districts 1991.

District	Rank by Literacy Rate (persons)	Rank by Literacy Gap (Ascending order)
Madras	1	2
Kanyakumari	2	1
Nilgiris	3	6
Chidambaranar	4	3
Coimbatore	5	4
Thanjavur	6	9
Chengai-Anna	7	7
Nellai Kattabomman	8	10
Pasumpon	9	19
Kamarajar	10	17
Tiruchirapalli	11	15
Madurai	12	11
Ramanathapuram	13	16
Dindigul Quaid - E Milleth	14	14
Pudukottai	15	20
North Arcot	16	13
Periyar	17	12
Salem	18	8
South Arcot	19	18
Dharmapuri	20	5

SOURCE : Census of India 1991, Series-23, Tamil Nadu, Paper 1 of 1991.

What Table 3 brings out is the fact that districts with high literacy ratios tend to have low gender gap in respect of these ratios. The clear surprise is Dharmapuri which is at the bottom of the pile with respect to the literacy ratio but near the top as far as gender gap performance is concerned.

Urban Literacy

Finally, some idea of urban literacy can be had by looking at Table 4 which presents the ratio of literates to population for cities/urban agglomerations with population exceeding 150,000. There are fifteen such places in Tamil Nadu.

TABLE — 4

Literates to Population, Percentage, Tamil Nadu 1991 Urban Agglomeration/City with Population Exceeding 1.5 Lakhs.

Sl. No.	City/U A	Persons	Males	Females
1.	Madras U.A	72.17	77.51	66.41
2.	Coimbatore U.A	74.05	76.76	70.68
3.	Madurai U.A	56.73	64.84	48.35
4.	Tiruchirapalli U.A	73.19	78.75	67.38
5.	Salem U.A	62.71	70.39	54.67
6.	Tirunelveli U.A	69.77	77.63	61.96
7.	Erode U.A	64.58	73.43	55.95
8.	Tiruppur U.A	64.50	73.28	55.00
9.	Vellore U A	66.46	73.58	59.20
10.	Tuticorin U.A	73.10	78.40	67.61
11.	Thanjavur City (M)	74.79	80.62	68.88
12.	Nagercoil City (M)	80 68	83.79	77 57
13.	Dindigul City (M)	71.61	78 36	64.61
14.	Kanchipuram U.A.	65.30	73.48	56.99
15:	Kumbakonam U A.	73.18	79.92	66.35

SOURCE : Census of India 1991, Series-23; Tamil Nadu, Paper 1 of 1991.
Note : Children in 0-6 age group are treated as illiterates in 1991.

Not surprisingly, all these cities/UAs report literacy ratios distinctly higher than the State average. The only exception in Madurai UA. whose performance is not very different from the State average (which is for rural and urban combined). By far the best performance is that of Nagerkoil city which reports both the highest literacy ratio and the lowest gender gap.

There is also a general association between the presence of a modern industrial base and literacy. Madras, Coimbatore, Tiruchirapalli and Tuticorin reflect this. This argument cannot be carried too far, however. For instance, Thanjavur city and Kumbakonam U. A. report high literacy ratios despite their rather limited industrial development, and are distinctly ahead of more industralised towns like Salem, Erode and Tiruppur. In the case of the latter three U.A.S. the gap between males and females is much larger and appears to reflect cultural and other factors specific to "Kongunad" which have been overcome only by Coimbatore with its near - metropolitan character.

Summing it all up, one can say that Tamil Nadu has made progress in literacy, and both inter-district and gender gaps have declined between 1981 and 1991. The fact remains, however, that there is a long way to go before the State can even begin to compare itself with Kerala, whose record in the achievement of literacy is truly remarkable.

Twentyfirst Census of Social Science Research in Southern States

1991

Introduction

The Twentyfirst Census of Social Science Research recorded 369 entries which has not only been a rise since 1987 but also well ahead of last years 277 entries. Table 1 which tabulates the entries according to states and institutes as well as disciplines shows that the coverage is far from being exhaustive. For instance, from Andhra Pradesh only 5 Universities/Institutions have responded and an equal number of 4 from Karnataka and Kerala and Tamil Nadu 9. This has been rather disappointing inspite of making special efforts to canvass information and sending reminders Letters were sent out to as many as over 200 departments in various universities in South India. We would welcome suggestion from users of the census on how its coverage can be made more comprehensive.

Table-1 as already mentioned, gives the list of institutions that have participated in the census and the general classification of entries according to the subjects. In all 22 institutions (departments) responded to the request for information. Of the total 369 entries, Economics leads with 278, which is a sharp rise from last year's 141 entries. Surprisingly for the first time, Anthropology takes the second place with 21 entries followed by History with 19 and Education with 16 and Geography with 8 entries. All subjects except Philosophy have found their entries this year although Demography, Law, Political Science and Social Work recorded neglibile entries when compared to last year. The figures for the remaining subjects are Agriculture, Commerce and Business Administration 6

each, Psychology 3, Law 2, and Demography, Political Science and Social Work 1 each.

The rows in Table—1 gives information about the institutions arranged according to States. The states total are also indicated. Like last year Andhra Pradesh leads with 198 entries over Tamil Nadu's 92 followed by Karnataka and Kerala.

In Andhra Pradesh, Economics leads with 194 entries. In Karnataka, Anthropology with 18 followed by Education with 11, in Kerala Economics has 29 entries and in Tamil Nadu Economics with 48 followed by Agriculture with 21.

Table—2 gives a more detailed classification of the census according to the purpose for which research is being done. Out of the 369 entries, 160 leads to Ph.D theses and 91 to M.Phil dessertations, the rest being research not linked to degrees.

Presentation of Census

Part 1 of the census which reports on research projects is organised as follows :

The classification is first, subject-wise, second, institution-wise (University, Institute and College), third, degree-wise (M.Phil, Ph. D and projects not leading to any degree) and fourth, sub area-wise (alphabetically) and within each sub-area the order is chronological. The subject classification and the institutional listing is alphabetically arranged beginning with Anthropology.

Every entry first carries the title of the project. This is followed by the sub-area to which the research project belongs. It should be noted that the sub-area is given by the respondents. Where this or any other information is absent from any entry, it may be under stood that the same was not furnished by the respondent. The sub-area is followed by a brief account of the objective and methodology of the project. Then follows the degree to which the project leads (Gen standing for 'General' is indicated if the project does not lead to a degree), the date of commencement of the project and date of termination, in that order. Finally, the names of the researcher and supervisor respectively are furnished. The abbreviation (Ind) appearing against the name of the researcher (s) indicates that the project has been undertaken independently by the researcher(s).

In the case of projects which have been reported either in the last census or in an earlier one, two points should be noted. (1) The objectives and methodology of projects are not repeated if they have already been reported in sufficient detail. However all other information is furnished. (2) In addition to other details, the objectives and methodology are included in cases where (i) this information was missing in the earlier report, (ii) the presentation in the current report appeared to be more clear or detailed, and (iii) any change was noticed in the Objectives and or Methodology.

The following abbreviation have been used in the presentation :

A : Sub-area

O : Objectives

M : Methodology

R : Name of the researcher

S : Name of the supervisor

Gen : General

Ind : Independent Research

In part II of the Census, the areas of specialisation of different centres is listed on the basis of information supplied by the heads of concerned centres (departments or institutes as the case may be). It is hoped that the information given in part II will help the researchers to find out where research work of their interest is currently going on. The appendix provides the addresses of the universities, institutes and colleges which have responded to the census.

Comments on the census from users and suggestions for improving the presentations of the reports will be most welcome and may be sent to the Director of the Institute.

TABLE : 1 Twenty first Census of Social Science Research in Southern Universities : General Classification

	Agriculture	Anthropology	Commerce & Business Administration	Demography	Economics	Education	Geography	History	Law	Political Science & Public Administration	Psychology	Social Work	Sociology	Total
I. Andhra Pradesh														
1. Andhra University	...	3	...	...	...	...	...	...	...	...	...	...	...	...
2. Osmania University	...	...	...	...	130	...	...	...	...	...	...	...	...	...
3. Sri. Venkateswara University	...	...	...	1	4	...	...	...	...	...	...	...	...	...
4. Administrative Staff College (Hyderabad)	...	...	...	...	76	...	...	...	...	...	...	...	...	...
5. Institute of Development and Planning Studies	...	...	...	...	11	...	...	...	...	...	...	...	...	...
Andhra Pradesh Total :	...	3	...	1	194	...	...	...	...	...	...	...	...	198
II. Karnataka														
1. Gulbarga University	...	...	...	...	5	...	...	...	...	...	...	...	...	...
2. Karnatak University	...	17	...	...	...	...	...	...	2	...	...	...	...	...
3. Mangalore University	...	...	...	...	...	...	...	3	...	...	...	...	...	...
4. University of Mysore	...	1	...	...	2	11	...	...	...	1	...	...	...	...
Karnataka total :	...	18	...	...	7	11	...	3	2	1	...	...	...	42

III. Kerara														
1. Calicut University	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2. Cochin University of Science and Technology	...	...	...	...	8	...	...	...	...	...	...	...	...	...
3. University of Kerala	...	...	...	...	15	...	...	2	...	...	3	...	3	...
4. Indian Institue of Regional Development Studies	...	...	...	...	6	...	...	...	...	...	...	...	...	...
Kerala total	...	...	...	...	29	...	...	2	...	..	3	...	3	37
IV. Tamil Nadu														
1. Annamalai University	...	...	...	...	7	...	...	...	...	...	...	...	...	...
2. Madurai Kamaraj University	...	...	6	...	2	5	...	...	...	...	...	...	3	...
3. Tamil Nadu GD Naidu Agri. University	6	...	...	...	...	...	...	...	...	...	...	...	...	...
4. University of Madras	...	...	...	...	17	...	8	14	...	...	...	...	...	5
5. Centre for Research on New International Economic Order	...	...	...	...	7	...	...	...	...	...	...	...	...	...
6. Madras Institute of Development Studies	...	...	...	...	12	...	...	...	...	...	...	...	1	...
7. Madras School of Social Work	...	...	...	...	...	...	...	...	...	...	...	...	...	...
8. Indian Institute of Technology	...	...	...	...	2	...	...	...	...	...	...	...	...	...
9. The Ethiraj College for women	...	...	...	...	1	...	...	...	...	...	...	...	...	...
Tamil Nadu total	6	...	6	...	48	5	8	14	...	...	...	1	4	92
Grand Total	6	21	6	1	278	16	8	19	2	1	3	1	7	369

TABLE : 2

Twentyfirst Census of Social Science Research in Southern Universities

Subject Classification

Area	Page No.	Ph.D.	M.Phil	General	Total
Agriculture	S. 7	—	—	6	6
Anthropology	S. 8	18	3	—	21
Commerce	S. 13	6	—	—	6
Demography	S. 15	—	—	1	1
Economics	S. 15	104	82	92	278
Education	S. 65	10	3	3	16
Geography	S. 71	5	3	--	8
History	S. 73	8	—	11	19
Law	S. 77	2	—	—	2
Political Science	S. 77	1	—	—	1
Psychology	S. 78	3	—	—	3
Social Work	S. 79	—	—	1	1
Sociology	S. 79	3	—	4	7
Total		160	91	118	369

Part 1. Research Projects

AGRICULTURE

Tamil Nadu GD Naidu Agricultural University

1. Study of Price Behaviour of Major Agricultural Commodities

A : Agricultural Marketing

O : To analyse emprically the influence of production on major agricultural commodities viz., paddy, sorghum, cumbu, ragi, sugarcane, cotton and groundnut on price; the extent of instability, seasonal and cyclical movements in the production and price of select commodities and study the relationship between farm, harvest price, wholesale price and retail price.

M : Secondary data on area, production, wholesale price, farm harvest price and retail price of select commodities collected. Fourier analysis, correlogram and peridogram, trend and seasonal indices employed.

Gen : April 1989 : January 1991

R : K. N. Selvaraj

S : (Ind)

2. Influence of risk on decisions concerning input use on tankfed farms of Chengai-Anna district

A : Natural Resource Economics

O : To quantify the risk attitude of farmers in the study area; study the socio-economic factors influencing risk behaviour; the influence of risk on farmers decision concerning input use and the influence of developmental programmes on sample farms.

M : Safety first criteria and regression analysis

Gen : August 1989 : January 1991

R : O. Timothy Randhir

S : (Ind)

3. An Assessment of the Impact of the Special Foodgrains Production Programme in Tamil Nadu

A : Agricultural Development

O : To study the awareness and adoption of the technologies in SEPP, the impact of SEPP on productivity, cost and returns and employment ; and identify the problems faced in the implementation of the programme.

M : Study conducted in 8 districts where SEPP was implemented. The information on paddy cultivation collected by the cost of cultivation of Principal Crops Scheme during 87-88 and 88-89 from the sample farms utilised for analysis. Percentage analysis done.

Gen : Jan 1990: Dec. 1990

R: S. D. Sivakumar

S: (Ind)

4. Study on the optimization of resource use in the farming system of Kalayarkoil block, Tamil Nadu

A : Production Economics

O : To document the current farming and cropping system in Kalayar koil block; the current production plans of farm operation under different cropping and farming systems; identify the socio-economic and technical constraints in farm production and derive an optimal plan given the resource constraints.

M : Linear programming technique used to derive optimal farm plan for each size group of farm viz. marginal, small and large situations.

Gen : Feb 1990: May 1990

R : N. Ajjan, R. Venkatram

S : (Ind)

5. Agro-climatic Regional Exercise at district level in Tamil Nadu

A : Development planning and policy

O : To identify the resource endowment, resource use and gap in the selected districts and diagnose the development issue of the different agroclimatic sub-regions of each district and identify the core statistics for each sub-region to overcome the problem diagnosed.

M : Tiruchirapalli and Ramanathapuram district selected and sub-regionalised into homogenous group based on agro-climatic factors and resource potential. Profile of agricultural performance analysed by trend analysis. The strategies identified for effective utilization of resources in consultation with different levels of development officials and farmers.

Gen July 1990: March 1991

R : S. R. Subramanian & M. Chinnadurai

S : (Ind)

6. Deforestation and Agricultural Productivity in India

A : Natural Resource and Environmental Economics

O : To study the trends in forest stock and agriculture in India ; develop a two-sector dynamic model for agriculture and forestry ; estimate optimal steady state forest-stock & suggest suitable policies to develop the sustainability of the two sectors.

M : Non linear regression and time series analysis used.

Gen : Sep. 1990 : Aug. 1991

R : O. Timothy Randhi

S : (Ind)

ANTHROPOLOGY

Andhra University

7. A Population Genetic Study of Konda Dora Tribe

A : Physical Anthroplogy

O : To record the ethnographic account of Konda Dora tribe inhabiting eastern Ghats of

Andhra Pradesh ; find out the population genetic structure of the tribe, report the anthrometric and demographic profile ; investigate blood gene markers of the tribe and trace the evolutionery system of population.

M : Demography and ethnography by using specific schedule ; finger and palm prints collected ; man and women are measured for assessing the physical profile of the population ; blood samples are tested for genetic markers; data from other Andhra Tribes is compared and discussed.

Ph. D: May 1990

R : S. Sachidevi

S : J. M. Naidu

8. The **Mannedoras** of Andhra Pradesh

A. Physical Anthropology

O : To note ethnography, demography and population structure of mannedora tribe from plains of Andhra Pradesh ; find out the effect of migration and rehabilitation on the tribal population and the genetic drift if any due to migration.

M : Schedule for collection of demography ; geniology collection for tracing migration ; official records for rehabilitation, information; blood samples analysed for blood genemarkers & drift calculated by maximum likelyhood analysis.

Ph. D : March 1989 : Feb : 1991

R : G. V. Ramana

S : J. M. Naidu

9. Aged Women in Rural Andhra Pradesh : An Anthropological Study

A : Social Anthropology

O : Explorative study attempted to have a general understanding of the life and problems of aged women in rural areas ; delineate the socio-economic & demographic characteristics of aged rural women ; analyse the role and status of the aged women in family and changes, if any, understand health and socio-psychological problem and study the coverage and efficacy of the social welfare measures.

M : 125 aged women from a rural mandal from east Godavari district of A. P. ; randomly selected from those villages studied. Schedule, observation, informed-interviews, case-studies employed.

M. Phil : Feb. 1989 : Dec. 1990

R : M. Himabindu

S : R. Yathraj Kumar

Karnatak University, Dharwad

10. Rural-urban migration and social social cultural change change among the Brahmins of Dharwad.

A : Ucrban Anthropology

O : -

M : -

Ph. D : 1982 : Ongoing

Ph. P. S. Adi

S : B. G. Halbar

11. Hanbars of South India: A study

A: Social Anthropology

O: To read the change in the country, the process and type of change, what is changed and where is continuing.

M: Structural-function method of anthropology

Ph. D: 1986: 1991

R: Aruna Hallikeni

S: K. G. Gurumurthy

12. Social-cultural study of T. V. Audiance

A: Social Anthropology

O: To study the input of T V. as an effective medium on the audience, changes taken place in the family life, daily routine and reading, radio writing and writing habits.

M: Anthropological

Ph. D: 1987 : 1991

R: M. Gengadharappa

S: K. G. Gurumurthy

13. A socio-cultural study of drinking habits in Dharwad town

A: Social, Cultural Anthropology

O: To understand both problematic and unproblematic aspects of alcoholic habits and alcohol use, the bearing of various socio-cultural factors in initiating and perpetuating the drinking habits, the effectiveness or ineffectiveness of legislative controls and the norms, values and attitudes in drinking and associated behaviour.

M: First hand, intensive ethnographic procedures, case studies and case histories

Ph. D: 1988 : Ongoing

R: V.Y. Vaddin

S: C. G. Hussainkhan.

14. Life, work and travails of Dalit women in Tamilnadu and the impact of development programme.

A: Anthropology of women

O: The dalit women are the victims of caste bias and sex-bias and suffer socio-political economic inequality, analyse the dalit women's perception of self and exploitation and handicaps.

M: Empirical, cultural, political study of two villages in Tamilnadu

Ph. D: Dec. 1988 : Ongoing

R: G. Suchitra Rao

S: B. G. Halbar

15. A socio-cultural study of child labour in a rural setting

A: Socio-cultural Anthropology

O: To understand the nature of child labour and its manifestation in the caste stratified

agricultural society; examine the place of child's work in the total work pattern of the people & assess the labour value of child from the people's perspective.

M : Intensive first hand field work forms the primary aspect of research investigation; interview and questionnaire schedules from the other aspects of the investigation used.

Ph. D : Nov. 1988 : Ongoing

R : S. V. Shirol

S : C. G. Hussainkhan

6. Crimes and customs among the Lambanis in Chitradurga District

A : Social Anthropology

O : To study crimes and customs among Lambanis in Chitradurga District of Karnataka

M : Interviews, library study, examining records.

Ph. D : Nov. 1988 : Ongoing

R : M. Krishnamurthy

S : N. K. Kadetotad

17. Factional Policies in Karnataka

A : Social Anthropology

O : To study factional politics in Karnataka during the decade of 1977-87.

M : Interviews, library study, participation with leaders.

Ph. D : Nov. 1988 : Ongoing

R : S. P. Halagi

S : N. K. Kadetotad

18. Life, living, and language among the Siddhis of North Canara district of Karnataka.

A : Social Anthropology

O : To examine their living conditions, the economic change & learn the language of Siddhis

M : Interviewing by schedule, participant research & use of interview guide.

Ph. D : July 1989 : Ongoing

R : R. S. Hiremath

S : N. K. Kadetotad

19. An Anthropological Study of the children of the slums of Coimbatore.

A : Social-Cultural Anthropology

To understand the totality of the real life situation of the children of the slums, their living conditions and the interlinkages between the social, cultural, economic, political and educational life that mould their personhood.

M : Survey, informal and journal interviews and participant observation.

Ph. D : July 1989 : August 1991

R : S. Rajagopal

S : Prabha Mahale

20. Anthropo-criminological study of chapparbands of Bijapur and Dharwad District.

A : Bio-social Anthropology

O : To analyse the anthropological and criminological aspects of chapparbands—an Ex-criminal tribe of Bijapur and Dharwad District.

M : Field and Laboratory work

Ph. D : July 1989 : Ongoing

R : M. G. Huddar

S : P. B. Gai

21. Killekyathas of Karnataka

A : Social Anthropology

O : To examine their socio-economic conditions, the socio-economic change and their changing mode of life

M : Interview by schedules, participant observation, participant research and use of interview guide.

Ph. D : Nov. 1989 : Ongoing

: R H. R. Amrutakuvar

S : N. K. Kadetotad

22. A study of culture and rental disorder in rural Andhra pradesh

A : Social Cultural Anthropology

O : To understand the psychic disorder from an epic perspective, know the value of indigenous methods of diagnosis and treatment and examine the role of indigenous doctors and their position in the social structure

M : Time tested anthropological holistic method constitutes the main feature of the research investigation, research is focussed on mental ailments and based on ethanophychiatric approach.

Ph. D : July 1990 : Ongoing

R : Md. Arif Ali

S : C. G. Hussain Khan

23. Genesis, nature and persistance of hostility of ten jarawas, the primitive tribe of Andaman Islands.

A : Social Anthropology

O : To investigate the origin of hostility towards outsiders, understand its forms and persistence in comparison to schedule behaviour among neighbouring tribes.

M : The traditional method of studying a community by living among the people is ruled out, in case of jarawa. So they will be studied from a distance. Secondary data on Jarawa and information used.

Ph.D : Aug. 1990 : Ongoing

R : S.A. Awaradi

S : B.G. Halbar

24. Nagore-e-Shariff : A Sacred Complex Study.

A : Social

O : To study the sacred complex in its different activites & know

the contribution of the shrine towards national integration.

M : Anthropological/historical

Ph.D : Nov. 1990 : Ongoing

R : S. A. A. Saheb

S : K. G. Gurumurthy

25. A study of the problems of the aged and need for social intervention.

A : Social Anthropology

O : To look into the living conditions of the aged, examine the status and the role of the aged, their health problems and ascertain the awarness-level of the aged about the available services and their utilisation.

M :

Gen : Nov. 1990 : Nov. 1991

R : K. G. Gurumurthy

S : GOI, Dept. of Social Welfare

26. Girl child and the family

A : Social - Cultural (Women's Studies)

O : To understand the situation of the girl child, identify major problems relating to the status of the girl child, to suggest alternate courses of action, start series of actions to help rectify the situation & assist the community and women in particular to pursue desirable alternatives by organising themselves.

M : Data from both primary and secondary sources.

Gen : Jan. 1991 : Jan. 1992

R : Nagesh Raikar, Mrinalini Sidnaj, Manikamma Kabadgi, Rajani Joshi, Rita Peters & Renuka Jadhav.

S : Prabha Mahale, Anil Mudabidri

University of Mysore

27. Ethno-medical study among selected tribal communities of South Karnataka.

A : Medical Anthropology.

O : To focus on tribal communities living in hilly terrains and plains of South Karnataka, about their indigenous interpretations of health, disease and treatment.

M : The study conducted in three stages. First stage consists of collecting secondary materials, second stage intensive fieldwork by using the conventional anthropological field techniques-observation, interview, participant observation.

Ph.D : May 1990 : Ongoing

R : R. Vijayendra

S : H. K. Bhat

COMMERCE AND BUSINESS ADMINISTRATION

Madurai Kamaraj University

28. The Marketing System of Coconut Industry in Tamilnadu

A : Marketing

O : To identify the various production centres, analyse the various economic aspects of coconuts

with the view of end users, the existing system of marketing practices and analyse the price inflation of all middlemen, the various problems faced by the farmers, consumers and marketing agents and role of Government agencies and other voluntary bodies like Coconut Development Council in promoting coconuts as commercial products.

M : Primary data from growers, consumers and marketing agents through questionnaire and interview technique. Secondary data with Government agencies and other related bodies like Coconut Board and Oil Seed Corporation regarding the production figures and marketing information.

Ph. D : Sep. 1988 : Sep. 1991

R : C. Chandran

S : K. Chidambaram

29. Energy and Systems Planning for a hospital

A : Hospital Management

O : Finding out the energy requirement for a hospital system and formulating a system model to substitute energy through non-conventional resources and estimating the manpower requirement for the hospital, forecast energy requirement for a hospital, formulate a system model for hospital and estimate the manpower requirements.

M : Exploratory research involving a case study of 800 bed hospital. The data is primary & secondary in nature and collected by observation and interview and the secondary data through hospital records & census reports.

Ph.D : Dec. 1989 : ongoing

R : R. Varadharajan

S : S. V. Vidyanandam

30. Marketing Practices in Tyre Industry.

A : Marketing

O : To identify and analyse the chief determinants of marketing success in the Indian Tyre Industry, study and analyse the recent marketing strategies adopted by different tyre companies.

M : Non-disguised structured questonnaire and interview with a sample from 4 groups of respondents, state level marketing managers, dealers, consumers—individuals of organisations & government officials.

Ph.D : July 1989 : July 1991

R : K. Ravichandran

S : R. Jayaraman

31. Socio-Economic Factors and Organisational Role Stress of Bank Managers.

A : Personnel

O : Branch Managers are subject to stress a lot, as such the study will be useful for the banks to take corrective measures,

identify factors responsible for overstress, rank the factors & suggest suitable corrective measures.

M : Descriptive type through questionnaire and interview

Ph.D : Oct. 1990 : Oct. 1993

R : P. Jayaseelapandian

S : G. P. Rao

32. Lease Financing

A : Financial Management

O : To find the economic aspect of leasing

M : Seconday data

Ph. D :-

R : C. Lakshmi Narayana Pillai

S : U. Surya Rao

33. University/Research Institution — Industry linkage in Knowledge Transfer

A : Technology/Knowledge Transfer

O : To identify the linkage mechanism between university/research institution—industry linkage for technology transfer & factors influencing commercialisation of technology developed by indigenous Institutions.

M: Based on primary data & secondary published data.

Ph.D: Jan. 1991 : Ongoing

R : M. Srinivasan

S : S.V.Vidyanandam

DEMOGRAPHY

Sri. Venkateswara University

34. Population Dynamics in Indian States

A : Determinants of Fertility and Mortality

O : To study all the major determinants of fertility and mortality on a cross-cultural basis and in the developed and developing regions of representative states in India, exploring the inter-relationship between fertility and mortality, and the nutritional status of the people on a sub-sample basis.

M : Altogether 6500 sample studied. Schedule was used for data collection.

Gen : 1984 : 1987

R: K.Mahadevan

S: (Ind.)

ECONOMICS

Osmania University

35. Determinants of India's Exports— with special reference to exports to ESCAP (1970-1988)

A :—

O :—

M :—

M. Phil. : 1990

R : S. Limba Goud

S : B. Satyanarayana

36. Female work participation in Andhra Pradesh

A :—

O :—

M :—
M. Phil. : 1990
R : A.K. Vanitha Devi
S : K. S. Upadhyay

37. Economic Cooperation among the SAARC Nations in the Small Scale Industry Sector.
A :—
O :—
M :—
M. Phil : 1990
R : Anjana Chatterjee
S : Arif A.Waqif

38. Variation in Commodity Composition of Indian Exports-(An Inter-Regional Analysis)
A :—
O :—
M :—
M.Phil : 1990
R : Girija Sastry
S : K.S. Upadhyay

39. Techno-Economic Aspects of Fisheries : A Comparative Study of Marine and Inland Fisheries in A.P.
A :—
O :—
M :—
M. Phil : 1990
R : C.Sudharshan Rao
S : S. Kishan Rao

40. Industrial Sickness in the Ancillary Sector
A :—
O :—
M :—
M. Phil : 1990
R : W. Veerabhadra Rao
S : M. Yadhava Reddy

41. Distribution of Government Waste Lands Programme—An Evaluation (A Case Study of Mahbubnagar District of Andhra Pradesh).
A :—
B :
M :
M. Phil : 1990
R : M. Satyanarayana Reddy
S : J.S. Narayan Rao

42. An Economic Analysis of Irrigation : A case study of Nagarjunasagar Project.
A :
O :
M : —
M. Phil : 1990
R : M. Surendar Reddy
S : Arif A. Waqif

43. Taxation in Andhra Pradesh 1961-62 to 1988—89.
A : —
O : —
M : —
M. Phil : 1990
R : M. Lakshmi Devi
S : M. Narasimhulu

44. Productivity in Paper Industry — A Regional Analysis
A : —
O : —
M : —
M. Phil : 1990
R : P. Gnaneshwar Swamy
S : J. Mahendar Reddy

45. Cost Structure and Tariff Policy of Andhra Pradesh State Electricity Borad
A : —
O : —
M : —
M. Phil : 1990
R . S. Venkateswar Rao
S : J.S. Narayan Rao

Osmania University, Arts College

46. Ground Water Development vis-a-vis other Forms of Irrigation
A : —
O : —

M : —

Ph.D. : July 1976 : ongoing

R : P. V. Krishnam Raju

S : A. R. K Murthy

47. State public Sector Enterprises in AP Analysis of their performance.

A : —

O : —

M : —

Ph.D. : Nov. 1977 : ongoing

R : V. Ramana Rao

S : A. Nagaraj

48. Terms of Trade between Agriculture and Industry with Special Reference to Telangana.

A : —

O : —

M : —

Ph.D. : Jan. 1979 : ongoing

R : K. Pratap Reddy

S : M. Yadava Reddy

49. Female Labour Absorption in A.P.

A : —

O : —

M : —

Ph.D. : June 1981 : ongoing

R : K. Rama Devi

S : K. S. Upadhyay

50. Performance of Regulated Markets with Special Reference to Farm Prices and Marketed Surplus of Selected Crop - A case Study of Three Districts in A.P.

A : —

O : —

M : —

Ph.D. : July 1982 : ongoing

R : A. Lalitha

S : S. Kishan Rao

51. Consumption Pattern and Basic Needs - A Case Study of Slum- Dwellers in the Twin Cities of Hyderabad - Secunderabad.

A : —

O : —

M : —

Ph.D. : Feb 1983 : ongoing

R : A. G. Moss

S : K. S. Upadhyay

52. Export of Manufactures from India in 1970's : An Evaluation of Performance and Indentification of Determinants.

A : —

O : —

M : —

Ph.D : August 1983: ongoing

R : J. Rajeswar Rao

S : J. Mahender Reddy

53. An Analytical Study of the Impact of IRD Programme.

A : —

O : —

M : —

Ph.D. : Feb. 1984 : 1990

R : C. H. Pothuluru

S : K. S. Upadhyay

54. Impact of Irrigation on Income Distribution.

A : —

O : —

M : —

Ph.D. : Feb. 1984 : ongoing

R : D. Krishna Murthy

S : M. Yadava Reddy

55. Import Substitution Industrialisation in India.

A : —

O : —

M : —

Ph.D. : Oct. 1984 : ongoing

R : G. Ramakrishna

S : M. Yadava Reddy

56. Growth Factor Productivity in AP Manufacturing Industries.

A : —

O : —

M : —

Ph.D. : Oct. 1984 : ongoing

R : T. L. N Swamy

S : J. Mahender Reddy

57. Impact of New Agricultural Technology on Production and Employment.

A : —

O : —

M : —

Ph.D. : Oct. 1984 : ongoing

R : K. Pothanna

S : J. Mahender Reddy

58. An Analysis of India's Import Demand 1950-82.

A : —

O : —

M : —

Ph.D. : Oct. 1984 : ongoing

R : V. K. Adwant

S : K. S. Upadhyay

59. Substitution between Conventional and Non-Conventional sources of Energy in Different Farm Size Groups

A : —

O : —

M : —

Ph.D. : Oct. 1984 : ongoing

R : Jacob George

S : J. Mahender Reddy

60. Export Potential of India's Engineering Industries.

A : —

O : —

M : —

Ph.D. : Oct. 1984: ongoing

R : V. K. Thomas

S : B. Sathyanarayan

61. Impact of Raw-Material and Energy on Production in Selected Manufacturing Industries.

A : —

O : —

M : —

Ph.D. : Oct. 1984 : ongoing

R : R. Nanda Kumar

S : K. S. Upadhyay

62. The Impact of Drought Prone Areas Production zon Income and Employment -A Case Study of Kurnool District.

A : —

O : —

M : —

Ph.D. : Nov. 1985 : ongoing

R : K. Someswaraiah

S : J. Mahender Reddy

63: Working of Joint Venture Units - A Study in A.P.

A : —

O : —

M : —

Ph.D. : Nov. 1985 : ongoing

R : Pakki Reddy

S : J. Mahender Reddy

64. Impact of DIC Programme on Rural Economy - Study of Three Selected districts in A.P.

A : —

O : —

M : —

Ph.D. : Nov. 1985 : ongoing

R : A. D. Rama Rao

S : K. S. Upadhyay

65. Export Promotion in India-Factors that impede it and Solution through Rational Integrated Approach.

A : —

O : —

M : —

Ph.D. : Nov. 1985 : ongoing

R : R. Kuppu Rao

S : K. S Upadhyay

66. Cooperatives and Agricultural Development in Andhra Pradesh.

A : —

O : —

M : —

Ph.D. : Dec. 1985 : ongoing

R : Syed Dastagiri Pasha

S : K. S. Upadhyay

67. Impact of Capital Intensity and Technical Progress in Indian Industries.

A : —

O : —

M : —

Ph.D. : Dec. 1985 : ongoing

R : V. Janaki

S : K. S. Upadhyay

68. Pattern of Industrial Development

A : —

O : —

M : —

Ph.D. : Aug. 1986 : ongoing

R : V. Rajamahender Reddy

S : M. Yadava Reddy

69. Incidence of Public Expenditure on Education.

A : —

O : —

M : —

Ph.D. : Nov. 1986 : ongoing

R : S. Sudhakar

S : B. Satyanarayan

70. The Role of HMT - A Public Sector Undertaking with Special Reference to its Commodity Diversification

A : —

O : —

M : —

Ph.D. : Feb. 1987 : ongoing

R : M. Manorama

S : P. Neerada Reddy

71. Process of Industrialisation in India 1965-85.

A : —

O : —

M : —

Ph.D. : Feb. 1987 : ongoing

R : K. M. Narasimham

S : K. S. Upadhyay

72. Impact of social Over-head Capital on Small-Scale Industries in A. P.

A : —

O : —

M : —

Ph.D. : Feb. 1987 : ongoing

R : M. Nirmal Reddy

S : B. Satyanarayan

73. Performance of Anti-Poverty Programmes : A Case Study of the Scheme for providing Self-Employment to Educated Unemployed Youth in Andhra Pradesh.

A : —

O : —

M : —

Ph.D. : Feb. 1987 : ongoing

R : K. Sateesh Reddy

S : B. Satyanarayan

74. Distributional Aspects of Public Expenditure on Education with Respect to Andhra Pradesh 1965-81.

A : —

O : —

M : —

Ph.D. : Feb. 1987

R : B. Shiva Reddy

S : M. Yadava Reddy

75. India's Agricultural Exports - Analysis of Determinants and Prospects.

A : —

O : —

M : —

Ph.D. : Feb. 1987 : ongoing

R : B. Gangaiah

S : J. Mahender Reddy

76. South Indian Coal Industry: An Analysis of Input - Output Prices and Productivity Trends.

A : —

O : —

M : —

Ph.D. : Feb. 1987 : ongoing

R : A. K. Vasudeva Chary

S : S. Kishan Rao

77. Economics of Wool Industry in A.P. with Special Reference to Mahabubnagar district.

A : —

O : —

M : —

Ph.D. : April. 1987 : ongoing

R : M. Ramakanth Rao

S : J. S. Narayan Rao

78. Functioning of Public Distribution System and Its Impact on Weaker Sections with special Reference to Andhra Pradesh.

A : —

O : —

M : —

Ph.D. : April. 1987 : ongoing

R : G. V. Ranga Rao

S : M. Yadava Reddy

79. Identification of Backward Region - A Study of Regional Disparities in Andhra Pradesh.

A : —

O : —

M : —

Ph.D. : April. 1988 : ongoing

R : J. Pandu Ranga Reddy

S : M. Yadava Reddy

80. Analysis of Agricultural Subsidies: A Case Study of A.P.

A : —

O : —

M : —

Ph.D. : July 1988 : ongoing

R : K. Shiva Rami Reddy

S : R. Radhakrishna

81. Energy & Economic Growth with special Reference to Census Manufacturing Sector 1960-80.

A : —

O : —

M : —

Ph.D. : July 1988 : ongoing

R : P. Rama Rao

S : J. Mahender Reddy

82. An Analysis of Functioning of Nizam Sugar Factory - A Case Study of Asmathnagar

A : —

O : —

M : —

Ph.D. : July. 1988 : Awarded

R : Syed Ali

S : K. S. Upadhyay

83. Pattern of Industrial Development : Inter State Comparisons.

A : —

O : —

M : —

Ph.D. : July. 1988 : ongoing

R : V. Rajeshwari

S : K. S. Upadhyay

84. Paper Industry in Andhra - Analysis of Structure Costs, Factors and Production.

A : —

O : —

M : —

Ph.D. : July. 1988 : ongoing

R : M. S. S. Somayajulu

S : K. S. Upadhyay

85. Development Planning & Disparities in AP (An Inter-state Regional Analysis between 1956-1980).

A : —

O : —

M : —

Ph.D. : July 1988 : ongoing

R : Asif Jehan

S : J. S. Narayan Rao

86. Evaluation of Integrated Rural Development Programmes : A Case Study of Two Mandals in Medak District.

A : —

O : —

M : —

Ph.D. : July 1988 : ongoing

R : G. Krishnaiah

S : J. S. Narayan Rao

87. Employment and Wage Patterns of Agricultural Labourers in A.P. for the period 1965-35.

A : —

O : —

M : —

Ph.D. : July 1988 : ongoing

R : N. Venkataiah

S : M. Yadava Reddy

88. Evaluation of IRDP - A Micro Level Study of Karimnagar District.

A : —

O : —

M : —

Ph.D. : Nov. 1988 : ongoing

R : K. Pratap Reddy

S : M. Yadava Reddy

89. Growth and Instability of Foodgrain Production in the four Southern States of India.

A : —

O : —

M : —

Ph.D. : Nov. 1988 : ongoing

R : N. Ramakrishna Reddy

S : J. Mahender Reddy

90. Pattern of Development and the Incidence of Rural Poverty in Three Regions of A. P.

A : —

O : —

M : —

Ph.D. Nov. 1988 : ongoing

R : I. Annapurna

S : K. S. Upadhyay

91. Financing of Indian Five Year plans with Special Reference to Taxation.

A : —

O : —

M : —

Ph.D. Nov. 1988 : ongoing

R : M. Venkateshwarlu

S : B. Satyanarayan

92. Andhra Pradesh Exports Trade: Trends and Prospects (1970-2000 A.D.).

A : —

O : —

M : —

Ph.D. : Jan 1990 : ongoing

R : Y. Pushpalatha

S : J. S. Narayan Rao

93. An Empirical Analysis of Demand for Money in India During the Period 1969-70 to 1988-89.

A : —

O : —

M : —

Ph D. : Jan 1990 : ongoing

R : D. V. G. Krishna

S : Yadava Reddy

94. Impact of Agricultural Development on Rural Poverty : A Study in Nalgonda District of Andhra Pradesh.

A : —

O : —

M : —

Ph.D. : Jan 1990 : ongoing

R : P. Srinivas Reddy

S : K. Chakradhar Rao

95. A Study on Seasonality of Due Dates of Crop Loans.

A : —

O : —

M : —

Ph.D. : Jan. 1990 : ongoing

R : S. K. Balasundaram

S : J. Mahender Reddy

96. Saving Behaviour in India with particular reference to Household Savings.

A : —

O : —

M : —

Ph.D. : Jan. 1990 : ongoing

R : S. L. Narayana

S : J. Mahender Reddy

97. Systems Approach to Development a Study on Irrigation.

A : —

O : —

M : —

Ph.D. : Jan. 1990 : ongoing

R : Savitha Devi

S : B. Satyanarayan

98. Regional Cooperation Among SAARC Countries : With Special Reference to Trading Pattern.

A : —

O : —

M : —

Ph.D. Jan. 1990: ongoing

R : N. Chandra Mouli

S : B. Satyanarayan

99. Productivity and Efficiency under Different Sources of Irrigation - A Case Study of A.P.

A : —

O : —

M : —

Ph.D. : Jan. 1990 : ongoing

R : D. Sanjeeva Reddy

S : B. Satyanarayan

100. Structure, Growth & Sectoral Trends in Indian Economy Since Independence.

A : —

O : —

M : —

Ph.D. : Jan. 1990 : ongoing

R : A. Umapathi Rao

S : S. Krishan Rao

101. Market Margins of Vegetables

A : Agriculture

O : —

M : M.Phil : Feb. 1987: 1990

R : J. Anjaiah

S : B. Satyanarayan

102. The Development Potential of Fisheries in Andhra Pradesh

A : Agriculture/Finance

O : —

M : —

M. Phil : Feb. 1987 : 1990

R : K. Bakkaiah

S : B. Satyanarayan

103. Impact of Irrigation on Cropping Pattern.

A : Agriculture

O : —

M : —

M. Phil : Feb. 1987 : 1990

R : Mahender Reddy

S : H. Venkateshwar Rao

104. Indian External Debt.

A : Foreign Trade

O : —

M : —

M. Phil : Feb. 1987 : 1990

R : K. Ranga Reddy

S : K. S. Upadhyay

105. Changing Industrial Structure in Andhra Pradesh.

A : Industries

O : —

M : —

M. Phil : Feb. 1987 : Dec. 1990

R : B. Sampath Rao

S : A. V. V. S. K. Rao

106. Impact of Gramodaya Scheme on Income and Employment Generation.

A : Rural Development

O : —

M : —

M. Phil : Feb. 1987 : Sep. 1990

R : S. Prakash Rao

S : J. S. Narayan Rao

107. Economic of Dry Land Farming: A Case Study of Mahabubnagar District in A. P.

A : Agriculture

O : —

M : —

M. Phil : Feb. 1988 : 1990

R : U. Venkataiah

S : Suguna

108. Impact of Regional Rural Banks on Weaker Sections (A Case Study of Nagarjuna Grammena Bank) Nalgonda District of Andhra Pradesh.

A : Development

O : —

M : —

M. Phil : Feb. 1988 : 1990

R : A. Raja Rao

S : K. Chakradhar Rao

109. Cost and Returns in Stone Polishing Industry: Comparative Study of Performance of Selected forms in Tandur.

A : Industries

O : —

M : —

M. Phil : Feb. 1988 : 1990

R : B. Karunakar

S : J. S. Narayan Rao

110. A Study of Productivity in Hyderabad Allwyn Limited.

A : Industries

O : —

M : —

M. Phil : Feb. 1988 : 1990

R : D. Madhusudhan

S : Kamalasubramaniam

111. Welfare Family Planning Programme in Andhra Pradesh: A Case Study of Khammam District.

A : Demography

O : —

M : —

M. Phil : Feb. 1988 : 1990

R : Venkateswarlu

S : H. Venkateshwara Rao

112. Levy System and Performance of Rice Mills (With Reference to the Mills in Miryalguda Mandal).

A : Indian Economy

O : —

M : —

M.Phil : Feb. 1988 :1990

R : B. Anand

S : K. Malla Reddy

113. Performance of District Industrial Centers in A. P. : A Case Study of D. I. C. of Ranga Reddy District.

A : Industries

O : —

M : —

M. Phil: Feb. 1988 : 1990

R : P. Venkateshwarlu

S : B. Satyanarayan

114. Socio-Economic Analysis of Coal Workers at Manugooru in Khammam District.

A : Labour

O : —

M : —

M. Phil : Feb. 1988 :1990

R : B. Santhosham

S : S. Indrakanth

115. Economic and Educational Status of Women Employees (NG's) Their Impact on Consumption (A Case Study of Osmania University.

A : Women's

O : —

M : —

M. Phil : Feb. 1988 : 1990

R : Sharada Devi

S : P. Neerada Reddy

116. Inter Farm Distribution of Agricultural Incomes (A Case Study of Nalgonda District),

O : —

M : —

M. Phil : Feb. 1989 : 1990

R : K. Amarender Reddy

S : K. Chakradhar Rao

117. Relationship between Size and Returns in a Less Developed Area (A Case Study of Kothagudem Mandal).

A : Agriculture

O : —

M : —

M. Phil : Feb. 1989 : 1990

R : K. Prameela

S : G. Gopal Reddy

118. Impact of D. P. A. P with Focus on Minor Irrigation and Animal Husbandry - A Case Study of Mahabubnagar District.

A : Agriculture

O : —

M : —

M. Phil : Feb. 1989 : 1990

R : K. Lakshmaiah

S : K. Saihara Gopal

119. Trends and Pattern of Electricity Consumption in A. P.

A : Energy

O : —

M : —

M. Phil : Feb. 1989 : 1990

R : V. Surender Rao

S : S. Indrakanth

120. Analysis of Inter State Industrial Disparities in India.

A : Industries

O : —

M : —

M. Phil : Feb. 1989 : 1990

R : A. Anuradha

S : A. V. V. S. A. Rao

121. Industrial Sickness of Small Scale Industries in A. P.

A : Industries

O : —

M : —

M. Phil : Feb. 1989 : 1990

R : T. V. Lakshmi

S : Tippa Reddy

122. Occupational Hazards and Living Standards of Beedi Workers. (A Case Study of 2 Mandals in Warangal District).

A : Labour

O : —

M : —

M. Phil : Feb.1989 : 1990

R : M. Maisadri

S : V. Suguna

123. Working Conditions and Magnitude of Exploitation of Child Labour in Construction Industry (A Sample Study of Hyderabad).

A : Labour

O : —

M : —

M. Phil : Feb. 1989 : 1990

R : S. Sunita

S : P. Neerada Reddy

124. Social Forestry and Rural Development in AP with Special Reference to Mahabubnagar District.

A : Rural Development

O : —

M : —

M. Phil : Feb. 1989 : 1990

R : T. Padmavati

S : K. Malla Reddy

125. Nature and Magnitude of Rural Unemployment (A Case Study of Mahabubnagar).

A : Rural Development

O : —

M : —

M. Phil: Feb. 1989 : 1990

R : J. Papalarayudu

S : J. S. Narayanan Rao

126. Impact of Infrastructure on Economic Development - A Case Study of Atmakoor in Nalgonda District.

A : Services

O : —

M : —

M. Phil : Feb. 1989 : 1990

R : K. Venkateshwarlu

S : Kamalasubramaniam

127. Asset Distribution and Occupational Structure (Miryalaguda Mandal).

A : Economics

O : —

M : —

M. Phil : Feb. 1990 : ongoing

R : G. Srinivas

S : Tippa Reddy

128. Growth and Pattern of Fertilizer Consumption in A. P. - Regional Analysis.

A : Agriculture

O : —

M : —

M. Phil: Feb. 1990 : ongoing

R : P. Vanaja Rani

S : V. Brahmanandam

129. Impact of Irrigation on composition of Cost of Cultivation.

A : Agriculture

O : —

M : —

M. Phil: Feb. 1990 : ongoing

R : K.Srinivas

S : G. Gopal Reddy

130. Regional Disparities in A. P. with Special Reference to Education.

A : Education

O : —

M : —

M. Phil : Feb. 1990 : ongoing

R : Madhavilatha

S : S. Kishan Rao

131. Elasticity of Substitution and Returns to Scale in Selected Manufacturing Industries Groups in A. P.

A : Energy

O : —

M : —

M. Phil : Feb. 1990 : ongoing

R : M. Sambasiva Rao

S : S. Indra Kanth

132. An Analysis of Productivity Manufacturing Sectors of Southern States in India.

A : Industries

O : —

M : —

M. Phil. : Feb. 1990 : ongoing

R : P. Subramaniam

S : A. V. V. S. K. Rao

133. Analysis of structure of Municipal Finance Inter Relation to Civic Functions (A Case Study of Khammam Municipality).

A : Public Finance

O : —

M : —

M. Phil : Feb. 1990 : ongoing

R : Ch. Sudarshan

S : K. Saihara Gopal

134. Impact and Evaluation of Single Window Credit System in A. P. (A Case Study of Nizamabad).

A : Rural Development

O : —

M : —

M. Phil : Feb. 1990 : ongoing

R : A. Padma

S : Sidda Goud

135. The Rural Permanent Housing Scheme in Medak - An Evaluation.

A : Rural Development

O : —

M : —

M. Phil : Feb. 1990 : ongoing

R : M. Ramulu

S : Rahul Sastry

136. Rural Employment Generation through D. R. D. A .(A Comparative study of 'Trysem' in Two Mandals of Tribal and Non Tribal Areas in Khammam District of A.P.).

A : Economics

O : —

M : —

M. Phil : Feb. 1990 : ongoing

R : J. Narasinga Rao

S : A. Muralidhar Rao

137. The Conditions of Organised and Unorganised Labour in Rang Reddy District - A Comparative Study.

A : Economics

O : —

M : —

M. Phil : Feb. 1990 : ongoing

R : K. Kamala

S : K. Chakradhar Rao

Sri Venkateswara University,

P.G. Centre, Kavali.

138. Balance of Payments Problems of Less Developed Countries with special reference to India.

A : International Economics

O: To examine the trends in balance of payments of developing countries in 1980's, find out nexus between current account deficit in the budget and the balance of payments problems in India & treating BOP difficulties in relation to traditional analysis of BOP Problems.

M: Secondary source publications of the World Bank and IMF are the main sources; Government of India and Reserve Bank of India for Indian data used.

Ph. D. : Sep. 1990 : Sep. 1996.

R : V. Pradeep Kumar

S : G. Chandrasekar Rao

139. Urban informal - A Case Study of Kavali, Andhra Pradesh.

A : Labour Market

O: To describe the nature and character of the urban informal sector; examine the composition and structure of enterprises and labour; analyse the nature of work and earning of labour and assess the levels of different categories of labour households.

M: The study is proposed to be based on the reports of the international institutions like International Labour Organisation and the official documents of Govt. of India and periodicals. Structured schedules will be canvassed among the sample units.

Ph.D. : 1990 - 1996

R : C. Jonathan

S : G. Raghava Reddy

140. Female labour Participation in A. P.

A : Women Studies

O: To assess the extent of participation of women in the Indian labour market and identify the factors affecting their participation; study the trends and changes in the supply of and demand for female labour vis-a-vis that of male labour in both organised and unorganised sectors of Kavali, take up a micro level study to assess the discrimination in wages based on sex and test whether female labour are aware of the legal provisions concerning them.

M: The semi-urban area, Kavali is selected as the sample area. Data will be collected from primary and secondary sources. Primary data will be collected by canvassing a structural schedule amongst the women of the sample areas.

Ph. D : Sep. 1990 : Sep. 1996

R : D. Jyothi

S : G. Chandrasekhar Rao

141. The Burden of Domestic Public Debt in India.

A: Public Finance

O: To analyse the place of public debt in the plan finances of India; describe the trend in the growth and composition of internal debt of the Government of India and assess the debt burden - Financial and Real - in terms of time series analysis.

M: The study is primarily based on official data, which is drawn from the Reports, Budgets and Surveys of the Government of India. The Publications of RBI, mainly Reports on Currency and Finance and Bulletins such as I.M.F. Staff papers, Finance and Development, International Financial Statistics Report are used.

M. Phil : Sep. 1990 : Sep. 1991

R : B. Ramakrishna Reddy

S : G. Chandrasekar Rao

Administrative staff college of India, Hyderabad

142. Evaluation Study of the Social Conservation Programme in the RVP Catchments of Mayurakshi.

A : Agriculture

O : —

M : —

Gen : April 1989

R: A. A. Firdausi, C. Sitapathi Rao, N. Premkumar

S: Directorate of Soil Conservation, Government of Bihar, Patna.

143. Evaluation Study of Jhum Control Schemes in the North Eastern States.

A : Agriculture

O : —

M : ·

Gen : Sep. 1989

R: C. Sitapathi Rao, S. Turabul Hassan, S. Satish, T. V. S. N Suryanarayana Rao, S. Raghuvir Rao, C. Vijaya Shyamala.

S: North Eastern Council, Ministry of Home Affairs, Government of India, Shillong.

144. Evaluation Study in the Catchment of River Valley Projects of Bhakra and Flood prone Catchment of Upper Yamuna and Upper Ganga.

A : Agriculture

O : —

M : —

Gen : Oct. 1989

R: C. Sitapathi Rao, C. Vijaya Shyamala, T. V. S. N. Surya narayana Rao.

S: National Land Use and Conservation Board, Ministry of Agriculture, Government of India, New Delhi.

145. Evaluation of Plantation Programmes.

A : Agriculture

O : —

M : —

Gen : March 1990

R: R. A. Firdausi, K. K. Singh, M. V. K. Sivamohan, Padma Ramachandran, Rahul Kumar

S: National Wastelands Developments Board, Ministry of Environment and Forests, Government of India, New Delhi.

146. Identifying Areas of Economic Cooperation in south Asia. (SAARC Project).

A : Economics

O : —

M : —

Gen : May 1989

R : Arif A. Waqif

S: Friedrich Ebert Stiftung, New Delhi/Bonn.

147. Potentials and Constraints in Economic Cooperation between India and Pakistan.

A : Economics

O : —

M : —

Gen : Sept. 1989

R : Arif A. Waqif

S: Information System for the Non-aligned and other Developing Countries (RIS), New Delhi.

148. Draft Guidelines for the Design of a Training Programme in Multi - Level Planning.

A : Economics

O : —

M : —

Gen : —

R: L. Shridharan & M. Surender Reddy

S: Planning Commission, Government of India, New Delhi.

149. Environmental Management.

A: Energy, Environment and Technology

O : —

M : —

Gen : —

R : B. Bowonder

S: Ministry of Environment, Government of India, New Delhi.

150. Recent Trends in Environmental Litigation.

A: Energy, Environment and Technology

O : —

M : —

Gen : April 1989

R : B. Bowonder, S. S. Aravind·

S : (Ind.)

151. Low Probability High Consequence Accident - An Analysis of Bhopal Accident.

A: Energy, Environment and Technology.

O: —

M: —

Gen : July 1989

R: B. Bowonder

S: (Ind.)

152. Environmental Management Practices at I. F. F. C. O Aonla : A Case Study.

A: Energy, Environment and Technology.

O: —

M: —

Gen : Oct. 1989

R: S. S. Arvind

S: (Ind.)

153. Environmental Management at National Fertilizers Ltd., Panipet: A Case Study.

A: Energy, Environment and Technology.

O: —

M: —

Gen : Nov. 1989

R: S. S. Arvind

S: (Ind.)

154. Environmental Management for Manufacturing Industries: A Bibliography.

A: Energy, Environment and Technology.

O : —

M : —

Gen : March 1990

R: S. S. R. Prasad, S. S. Arvind & S. V. Ramana

S : (Ind.)

155. Technological Forecasting in Decision - Making.

A: Energy, Environment and Technology.

O: —

M: —

Gen : —

R: B. Bowonder

S: (Ind.)

156. An Analysis of Japanese Electronics Industry; some Lessons for India Report - 1.

A: Energy, Environment and Technology.

O: —

M: —

Gen : July 1989

R: B. Bowonder, T. Miyake

S: (Ind.)

157. Technology Forecasting and Technology Information Systems in Japan for Decision - Making for Catching up in Technology Report-II.

A: Energy, Environment and Technology.

O: —

M: —

Gen : Dec.1989

R: B. Bowonder, T. Miyake

S: (Ind.)

158. Technological Forecasting : Methodologies and Case Studies Report - III.

A: Energy, Environment and Technology.

O: —

M: —

Gen : Feb. 1990

R: B. Bowonder

S: (Ind.)

159. Energy Management Case Studies.

A: Energy, Environment and Technology.

O: —

M: —

Gen : —

R: S. S. R. Prasad

S: Petroleum Conservation Research Association, Oil Industry Development Board, Ministry of Petroleum, Govt. Of India, New Delhi.

160. Energy Management at a Petro chemical Industry - A Case Study.

A: Energy, Environment and Technology.

O: —

M: —

Gen : Aug. 1989

R: S. S. R. Prasad, S. K. Awasthi

S: (Ind.)

161. Energy Management for Manufacturing Industries: A Bibliography.

A: Energy, Environment and Technology.

O: —

M: —

Gen : Sep. 1989

R: S. S. R. Prasad, C. V. Ramakrishna, D. S. Prasad

S: (Ind.)

162. Evaluation Study of Solar Photovoltaic Systems.

A: Energy, Environment and Technology.

O: —

M: —

Gen : —

R: S. S. R. Prasad

S: Department of Non-Conventional Energy Sources, Ministry of Energy, Government of India, New Delhi.

163. Evaluation of Solar Photovoltaic Systems.

A: Energy, Environment and Technology.

O: —

M: —

Gen : Sep. 1989

R: S. S. R. Prasad, C. V. Ramakrishna, D. S. Prasad

S: (Ind.)

164. A Study of Women Managers in the Indian Corporate Sector.

A : Organisation Behaviour

O : —

M : —

Gen : March 1990

R : Kokila Parthasarathy

S : (Ind.)

165. Policy Workshop on People's Participation in Irrigation Management.

A : Agriculture and Rural Development.

O : —

M : —

Gen : 1985 : ongoing

R : K. K. Singh

S : Ford Foundation, New Delhi

166. Farmers' Participation in Irrigation Management.

A : Agriculture and Rural Development.

O: —

M: —

Gen : June 1991 : ongoing

R: K. K. Singh, C. Sitapathi Rao

S: Ford Foundation, New Delhi

167. Action Research Programme: On Farmer Managed Irrigation systems in the Sri Ram Sagar Project.

A: Agriculture and Rural Development.

O: —

M: —

Gen : ongoing

R: R. K. K. Singh, S. Turabul Hassan, C. Sitapathi Rao.

S: (Ind.)

168. Case Study on Vijaipur Project.

A: Agriculture and Rural Development.

O: —

M: —

Gen : April — July 1988

R: K. S. Ramesh, A. V. Srinivasan

S: National Fertilizers Ltd., New Delhi.

169. Study of Watershed Management and Irrigation in Drought Affected Areas in the State of A. P. and Karnataka.

A: Agriculture and Rural Development.

O: —

M: —

Gen : January to October 1989

R: S. Turabul Hassan, C. Sitapathi Rao, S. Satish, M. V. K. Siva Mohan.

S: Planning commission, GOI, New Delhi.

170. Evaluation of Agricultural Programmes: Seed Distributions

A: Agriculture and Rural Development.

O: —

M: —

Gen : April to October 1989

R: C. Sitapathi Rao, S. Turabul Hassan.

S: Commissioner and Directorate of Agriculture, Government of Andhra Pradesh, Hyderabad.

171. Evaluation of Intensive Cattle Development Programmes.

A: Agriculture and Rural Development.

O: —

M: —

Gen : March 1989 — Jan. 1990

R: K. S. Ramesh, S. Satish

S: Directorate of Animal Husbandry, Govt. of Tamil Nadu, Madras.

172. Evaluation Study in the Catchment of River Valley Project of Pohru (Jammu and Kashmir).

A: Agriculture and Rural Development.

O: —

M: —

Gen : May — Dec. 1989

R: C. Sitapathi Rao, S. Turabul Hassan.

S: Ministry of Agriculture, Government of India, New Delhi.

173. Planning and Management of Development Projects at District Level.

A: Agriculture and Rural Development.

O: —

M: —

Gen : Dec. 1989 — July 1990

R: K. S. Ramesh, S. Turabul Hassan, A. A. Firdausi.

S: Planning Commission, SER Unit, Govt. of India, New Delhi.

174. Evaluation of Farmers Training Centres in Andhra Pradesh.

A: Agriculture and Rural Development.

O: —

M: —

Gen : Jan. — June 1990

R: A. A. Firdausi, C. Sitapathi Rao

S: Commissioner and directorate of Agriculture, Govt. of A. P.

175. Agriculture Technology Diffusion Policies in India.

A: Agriculture and Rural Development.

O: —

M: —

Gen : June — Sep. 1991

R: S. Satish

S: Overseas Development Institute, U. K.

176. A Computer - based Management Information System Development for Kerala State Civil Supplies Corporation.

A: Computer and MIS

O: —

M: —

Gen : Jan. 1988 — March 1990

R: M. Raja

S: UNDP and DOE, Govt. of India, New Delhi

177. Information System for Maintenance Workshop for APSRTC.

A: Computer and MIS

O: —

M: —

Gen : ongoing

R: H. S. Sai, Mukund Mohan

S: UNDP and DOE, Govt. of India, New Delhi.

178. Computerised Standard Costing Package for RTC Body Building Unit.

A: Computer and MIS

O: —

M: —

Gen : ongoing

R: Nirmala Hindupur, Bhaskar Dasgupta.

S: UNDP and DOE, Govt. of India, New Delhi.

179. Prospects for Joint Economic Activities Between Pakistan and India: Some Selected Dimensions.

A: Economics

O: —

M: —

Gen : ongoing

R: Arif A.Waqif, M. Surender Reddy, Anjana Chatterjee.

S: Friedrich Ebert Stiftung / Bonn, New Delhi.

180. Multi - level and Regional Planning Project.

A: Economics

O: —

M: —

Gen : April 1985—March 1991

R: Arif A. Waqif, Balwanth Reddy, L. Shridharan, M. Surender Reddy, Paramita Dasgupta.

S: Friedrich Ebert Stiftung, New Delhi/Bonn.

181. Economics of Cultivation of Clove, Nutmeg, and Mace.

A: Economics

O: —

M: —

Gen : March — August 1990

R: L. Sridharan, M. Surender Reddy, S. Satish.

S: Spices Board, Ministry of Commerce, GOI, Cochin.

182. Multilateral Study on Joint Venture Potentials in South Asia.

A: Economics

O: —

M: —

Gen : July — Dec. 1990

R: Arif A. Waqif, Anjana Chatterjee.

S: Friedrich Ebert Stiftung, New Delhi/Bonn.

183. Environmental Management.

A: Energy, Environment and Technology.

O: —

M: —

Gen : April 1989—March 1990

R: B. Bowonder, S. S. R. Prasad, S. S. Arvind.

S: Ministry of Environment and

Forests, Governments of India, New Delhi.

184. Energy Management Case Studies.

A: Energy, Environment and Technology.

O: —

M: —

Gen : April 1985 — March 1990

R: S. S. R. Prasad

S: Petroleum Conservation Research Association, Oil Industry Development Board, Ministry of Petroleum, Govt. of India, New Delhi.

185. Economic Growth with Environmental Protection.

A: Energy, Environment and Technology.

O: —

M: —

Gen : June 1988 - Nov. 1990

R: B. Bowonder

S: Friedrich Ebert Stiftung, New Delhi/Bonn.

186. Evaluation Study of Solar Photovoltaic Systems.

A: Energy, Environment and Technology.

O: —

M: —

Gen : June 1989 — June 1991

R: S. S. R. Prasad

S: Dept. of Non-conventional Energy Sources, Ministry of Energy, Govt. of India, New Delhi.

187. Technology Assessment Practices.

A: Energy, Environment and Technology.

O: —

M: —

Gen : April 1990 — March 1991

R: B. Bowonder

S: Technology Information Forecasting and Assessment Council, GOI, New Delhi.

188. Technology Assessment Manual with Case Studies: Technology Information Forecasting and Assessment Council.

A: Energy, Environment and Technology.

O: —

M: —

Gen : April 1990 — March 1991

R: B. Bowonder

S: Technology Information Forecasting and Assessment Council, Ministry of Science and Technology, Govt. of India, New Delhi.

189. Industrial Automation.

A: Energy, Environment and Technology.

O: —

M: —

Gen : June 1990—March 1991

R: B. Bowonder

S: Indian Institute of Management, Ahmedabad.

190. Organisational Climate and its Impact on various Aspects of Work Life in Public Sector Organisation.

A: Organisation Behaviour

O: —

M: —

Gen : Dec. 1983 — Sep. 1990

R: Pritam Singh

S: ICSSR, New Delhi

191. The Value Profile of IAS.

A: Organisation Behaviour

O: —

M: —

Gen : Sep. 1989 — Sep. 1991

R: Pritam Singh, Asha Bhandarkar

S: ICSSR, New Delhi

192. Corporate Social Accountability.

A: Public Policy and Systems

O: —

M: —

Gen : Nov. 1986 — Dec. 1989

R: G. R. S. Rao

S: Ford Foundation, New Delhi

193. Formal Schooling and Personal Efficacy in India and the US — Women in the Market: Who Benefits?

A: Social Services

O: —

M: —

Gen : ongoing

R: Daphne M. Rebello

S: ICSSR, New Delhi

194. Evaluation of Family Welfare Education in Organised Sector.

A: Social Services

O: —

M: —

Gen : ongoing

R: G. Narayana

S: ILO and Ministry of Health and Family Welfare, Govt. of India, New Delhi.

195. Baseline Surveys.

A: Social Services

O: —

M: —

Gen : April 1990 — Nov. 1990

R: G. Narayana

S: Ministry of Health and Family Welfare, Dept. of Family Welfare, Govt. of India, New Delhi.

196. Technology Management Practices in Indian Companies (Phase I).

A: Energy, Environment and Technology.

O: —

M: —

Gen : 1989 : 1990

R: B. Bowonder, Arif A. Waqif, T. D. S. Kumar.

S: (Ind.)

197. Lessor Evaluation Practices: A Survey of Indian Leasing Companies.

A: Finance

O: —

M: —

Gen : 1989 : 1990

R: Mohinder N. Kaura

S: (Ind.)

198. Transformational Leadership

A: Public Enterprises

O: —

M: —

Gen : 1989 : 1990

R: P. Singh

S: (Ind.)

199. Role and Functions of Directors on Public Enterprise Boards.

A: Public Enterprises

O: —

M: —

Gen : April 1990

R: S. Padam

S: (Ind.)

200. Public Enterprises : Promise and Performance.

A: Public Enterprises

O: —

M: —

Gen : April 1990

R: B. Kinnera Murthy

S: (Ind.)

201. Case Studies of Turnaround Management : A Profile.

A: Public Enterprises

O: —

M: —

Gen : April 1990

R: Mathew J. Manimala, Pritam Singh, Mohiner N. Kaura, A. A. Gopalakrishnan:

S: (Ind.)

202. An Expert Support System for a Corporate Data Base Public Enterprises — An Exploratory Study.

A: Public Enterprises

O: —

M: —

Gen : April 1990

R: A. V. Srinivasan, B. K. Malleswari, Mubeen Rafat.

S: (Ind.)

203. Concept of Political will in the Context of Evolving a Suitable Performance Evaluation System for Public Enterprises : Some Explorations.

A: Public Enterprises

O: —

M: —

Gen : ongoing

R: K. S. Sastry

S: (Ind.)

204. Strategic Alternatives of Counter — Trade Promotion.

A: International Economics

O: —

M: —

Gen : ongoing

R: K. R. Rao

S: (Ind.)

205. A Quarter Century of Industrial Relations.

A: Industrial Economics

O: —

M: —

Gen : ongoing

R: E. A. Ramaswamy, B. Murlidharan

S: (Ind.)

206. Technology Management Practices in Indian Companies (Phase II).

A: Commerce

O: —

M: —

Gen : ongoing

R: B. Bowonder, Arif A. Waqif, T. D. S. Kumar.

S: (Ind.)

207. Energy Management Practices in Selected Industries.

A: Energy

O: —

M: —

Gen : ongoing

R: S. S. R. Prasad

S: (Ind.)

208. Human Resource Management Practices in the Department of Health and Family Welfare.

A: Health Economics

O: —

M: —

Gen : ongoing

R: U. Pandey

S: (Ind.)

209. Policies and Policy Processes in India.

A: Policies and Policy

O: —

M: —

Gen : ongoing

R: G. Narayana, B. Bowonder

S: (Ind.)

210. Project Management for IAS Officers for Level — 1 & 2.

A: Administration

O: —

M: —

Gen : ongoing

R: P. V. Ganesan

S: (Ind.)

211. Development of Materials Management Game.

A: Management

O: —

M: —

Gen : ongoing

R: P. V. Ganesan

S: (Ind.)

212. Civil Services in India: Future Training Needs (AMDISA).

A: Civil Services

O: —

M: —

Gen : ongoing

R: G. Narayana

S: (Ind.)

213. Working Capital Management — Indian Practices.

A: Financial Management

O: —

M: —

Gen : ongoing

R: V. E. Ramamoorthy

S: (Ind.)

214. Emerging Financial Services Industry.

A: Financial Management

O: —

M: —

Gen : ongoing

R: Mubeen Rafat

S: (Ind.)

215. Indian Management Practices Seminar.

A: Management

O: —

M: —

Gen : ongoing

R: B. R. Virmani

S: Friedrich Ebert Stiftung, New Delhi/Bonn.

216. Fertiliser Usage Efficiencies: A Micro — Level Study.

A: Fertiliser

O: —

M: —

Gen : May 1990 : ongoing

R: S. Satish, H S. Sai, Hermasekharappa.

S: (Ind.)

217. Status Report on Quality Circle Movement in India.

A: Quality

O: —

M: —

Gen : April 1990 : ongoing

R: A. V. Srinivasan

S: (Ind.)

Institute of Development and Planning Studies, Muvvavanipalem

218. Food Policies and strategies in India.

A: —

O: —

M: —

M. Phil : 1989 : 1990

R: Baby Arojini

S: (Ind.)

219. Institutional Credit to Priority Sectors.

A: —

O: —

M: —

M. Phil : 1989 : 1990

R: M. V. V. Rajya Lakshmi

S: (Ind.)

220. Industrial Development in India with Specific reference to Small Scale Industries.

A: —

O: —

M: —

M. Phil : 1989 : 1990

R: B. Subba Lakshmi

S: (Ind.)

221. Institutional Credit to Piority Sectors.

A: —

O: —

M: —

M. Phil : 1989 : 1990

R: Malaya Devi

S: (Ind.)

222. Food Policies and Strategies in India.

A: —

O: —

M: —

M. Phil : 1989 : 1990

R: P. Sanjeeva Rao

S: (Ind.)

223. Institutional Credit to Priority Sectors.

A: —

O: —

M: —

M. Phil : 1989 : 1990

R: D. Ramachandra Raju

S: (Ind.)

224. Technological Change and Agricultural Development in India.

A: —

O: —

M: —

M. Phil : 1989 : 1990

R: Bh. Ramachandra Raju

S: (Ind.)

225. Technological change and Agricultural Development in India.

A: —

O: —

M: —

M. Phil : 1989 : 1990

R: B. V. Narasimha Raju

S: (Ind.)

226. Technological change in Agricultural Development in India.

A: —

O: —

M: —

M. Phil : 1989 : 1990

R: T. Venugopala Rao

S: (Ind.)

227. A Study of Environmental Problems in the City of Visakhapatnam and the Surrounding Areas.

A: Environmental Economics

O: To identify the nature and magnitude of environmental problems arising from the industrial location and growth and urbanisation in the Visakhapatnam region, suggest measures to contain pollution and protect the environment.

M: Critical review of available studies on the problems and methodologies adopted.

Gen : Dec. 1988 : Aug. 1990

R: B. Sarveswara Rao

T. Shivaji Rao

M. N. Sastri

S: (Ind.)

228. Upgradation of Technology in Handloom Sector — A Case Study of Nellipudi village in Visakhapatnam District.

A: Action Research and Socio - economic aspects.

O: To conduct a socio-economic survey of weaver families for the purpose of finding the existing demographic and socio-economic conditions of weaver families in Nellipudi Village, the production technology in vogue from the pre-weaving to final stage, and its effect on output, employment and income levels of weaving house holds, the income generated by the weaving and subsidiary occupations, if any; pattern of expenditure, saving, indebtedness of families, sources of borrowing etc. Secondly, the role of weavers Cooperative Society (Godicherla Cooperative Society) in the supply of inputs and marketing of finished products. Thirdly, the impact of new skills acquired by women through training programme given under TRYSEM for a period of 6 months from Sept. 1989 to Feb. 1990; suggest a package of measures to make handloom weavers economically viable in terms of income and employment generation, and to suggest areas of further study and intervention by CAR (Cell for Action Research of IDPS).

M: Action Research Methodology

Gen : Aug. 1990 : Nov. 1990

R: A. V. Ranganadhachari

K. V. Ramana

B. V. Radhakrishna

S: (Ind.)

Gulbarga University

229. Urban Growth & Urban Amenities — A Case Study of Karnataka.

A: Urban Economics

O: —

M: Secondary data

Ph. D. : Dec. 1987 : June 1990

R: O. D. Heggade

S: M. S. Kallur

230. A Study of the Decentralised Block plan for Bhalki District, Bidar.

A: Decentralised Planning

O: —

M: Primary data

M. Phil : Jan. 1990 : Dec. 1990

R: Ravidas J.

S: B. N. Nimbur

231. Impact of Lift Irrigation on Agriculture — A Study of Bellary District in Karnataka.

A: Irrigation Economics

O: —

M: Primary data

M. Phil : Jan. 1990 : Dec. 1990

R: F. C. Kalawadamath

S: C. K. Degaonkar

232. Socio — Economic conditions of Handloom weavers — A Case Study of Gulbarga District in Karnataka State.

A: Small Scale Cottage Industries of India.

O: —

M: Primary data

M. Phil : Jan. 1990 : Dec. 1990

R: Kalkeri Chidambarao

S: M. S. Kallur

233. Trade & Growth : A Case Study of Gulbarga District.

A: International Economics

O: —

M: Secondary and Primary data

M. Phil : Jan. 1990 : Dec. 1990

R: Revanasiddeswara Kuntimath

S: B. N. Nimbur

University of Mysore

234. A Study of Industrial estates in Karnataka.

A: Industrial Economics

O: To trace the role of industrial estates in the development of small industries, entrepreneurship and regional development in Karnataka.

M: Secondary & Primary sources, Half yearly progress report on industrial estates published by the DCSSI, New Delhi to trace the growth of estates in India, and KSSIDC in Karnataka constitute a major source of information. Regional multiplier and linkage effect analysis used to trace the role of industrial estate in a particular region.

Ph. D. : Feb. 1986 : ongoing

R: D. S. Leelavathi

S: S. Nagaraju

235. A Study of agricultural credit cooperative overdues and recovery performance in Karnataka.

A: Agricultural study

O: To study in depth the problem of cooperative overdues, analyse the quantitative and qualitative factors affecting the movement and study its regional imbalances.

M: Primary and Secondary data
Ph. D. : Oct. 1987 : ongoing

R: A. R. Viswanatha

S: C. K. Renukarya

Cochin University of Science and Technology

236. Export Oriented Industrialisation and Industrial Backwardness: A Study of Kerala.

A: Industrial Economics

O: To examine the relationship between export - orientation and industrial backwardness of Kerala.

M: Historical study, Secondary sources.

Ph. D. : Dec. 1986 : Dec. 1992

R: Suja A. N.

S: M. K. Sukumaran Nair

237. Linkage of Electrical Machinery Industry - A case study of Kerala.

A: Industrial Economics

O: To study the linkages generated by electrical industry in the state economy; if strong linkages are lacking the reasons for establishing these industries and draw some theoretical and policy implications.

M: Secondary sources

Ph. D. : Jan. 1987 : Dec. 1992.

R: Ushakumari K.

S: M. K. Sukumaran Nair

238. Economics of Tourism Industry with special reference to Beach Tourism in Kerala.

A: Industrial Economics

O: To evaluate the contribution of Tourism industry to the economy in the spheres of Employment generation, Foreign exchange earnings etc.

M: Primary and Secondary data

Ph. D. : June 1988 : ongoing

R: Sambhu Nampoothiri N.

S: Jose T. Payyappilly

239. Paper Industry in Kerala : An Evaluation of Labour Absorption, Capacity Utilisation and Environmental Pollution.

A: Industrial Economics

O: To study the productivity of the pulp and paper industry in comparison with industries in the State and the capacity utilisation and absorption.

M: —

Ph. D. : May 1985 : ongoing

R: Sunny George

S: Mary Joseph

240. India's Engineering Exports

A: International Economics

O: To study the trends and tendencies of Engineering Exports and the incentives and export promotion measures.

M: Secondary data

Ph. D. : Feb. : 1989

R: P. Arunachalam

S: D. Rajasenan

241. Social stratification and consumer behaviour in Kerala.

A: Consumer Economics

O: To study the purchasing process of durables among various social classes and the diffusion process.

M: —

Ph. D. : July 1989 : 1992

R: J. C. Edison

S: G. Antony

242. Time lag and Cost over run with special reference to Hydro Electric Projects.

A: Industrial Economics

O: To analyse the causes and effects of time lag and cost overrun on the economy and the functional relationship between time lag and cost overrun.

M: —

Ph. D. : March 1990 : 1993

R: Baby Thomas

S: Rajesenan

243. Level of Women Participation in Rural Development - A Comparative Study of Governmental and Non-Governmental Organisations in Kerala.

A: Women's Studies

O: To assess and compare the level of women participation in the rural development programmes of governmental and non-governmental organisations, find out the factors promoting/preventing women participation and assess the role of rural leadership in promoting women participation.

M: Three districts of Kerala and tools like percentage ratio, Yules coefficient and scaling techniques.

Ph. D. : April 1990 : April 1993

R: Molly Joseph

S: Mary Joseph

University of Kerala

244. Capacity Utilization in Manufacturing Industries of Kerala.

A: Industrial Economics

O: To devise and test empirically measures of capacity utilization in manufacturing industries of Kerala and identify the variations in the degree of capacity utilization between various classes/groups of industries.

M: Secondary sources of data like ASI census as well as sample sector at a little disaggregated level.

Ph. D. : Feb. 1981 : ongoing

R: V. Nandamohan

S: K. Ramachandran Nair

245. Impact of Socio-economic factors in the choice of transportation modes in Kerala.

A: Transport Economics

O: To study the impact of various socio - economic inputs in the pattern of traffic distribution and their modal splits in the region, analyse the pattern of inter-district pattern of passenger and cargo traffic and work out the comparative units cost of transportation for various commodities by roads, rail and IWT systems, work out inter-modal traffic split based on the cost economies and consumer preferences.

M: Survey method & Secondary data

Ph. D. : June 1985 : ongoing

R: G. Ravikumar

S: G. Karunakaran Pillai

246. Externalities of Borewell Irrigation — A Case Study of Karnataka.

A: Welfare Economics

O: To study the modes of traditional resource management, analyse the socio, economic and communo-ecological external effects of borewell irrigation in the village and the effects on the reproduction of social classes dependent on the traditional mode.

M: A village based study, using inter - disciplinary methodology brought out the empirical dimensions of the problem. A structural approach adopted to analyse the different communo - ecological and socio-economic externalities.

Ph. D. : 1986 : 1989

R: A. Damodaran

S: K. Ramachandran Nair

247. Factors of Socio - Economic Backwardness in Minority Communities in India — A Study with reference to Muslim Community.

A: Economics of Minority Communities.

O: To find out the representational share of the Muslim community in India in the socio-economic spheres of activity, examine whether the community has made use of the opportunities available to them and find out whether the community has made efforts to improve its socio-economic conditions.

M: Statistical and analystical

Ph. D. : 1987 : 1990

R: C. A. Abdussalam

S: P. R. Gopinathan Nair

248. Economic Development of Backward Communities.

A: Caste and Economic Development.

O: To examine whether the caste factor influences the socio-economic structure, whether the policies followed in the recent past to reduce inequalities yielded positive results, the role played by asset distribution and access to education in ameliorating inequalities in Kerala.

M: Historical and empirical

Ph. D. : 1982 : 1990

R: P. Sivanandan

S: P. R. Gopinathan Nair

249. Economics of Public Water supply system with special reference to Kerala.

A: Public Economics

O: To identify the economic variables determining water demand of housholds, examine the need for planning water supply system and the water producing pattern in operations and to suggest appropriate criteria for water pricing and alternative approaches to self-financing of water supply

scheme.

M: Primary and Secondary data

Gen : Jan. 1987 : May 1990

R: Jacob John

S: G. Karunakaran Pillai

250. Economics of Inland Water Transport : A Study of Country Crafts Sector in Kerala.

A: Transport Economics

O: To examine the present status of Inland Water Transport in India and Kerala, analyse the functioning of the traditional country crafts sector in terms of ownership, operational pattern and economic efficiency, assess the productivity of the traditional country crafts sector in terms of costs and profitability.

M: Statistical and analytical

M. Phil : 1988 : 1990

R: M. S. James

S: P. R. Gopinathan Nair

251. Impact of Emigration on Education : Case of Muslim Community in Kerala.

A: Economic of Education

O: To examine whether significant differences are observed as between the emigrants' and non-emigrants' households in respect of educational performance.

M: Analytical, based on primary data

M. Phil : 1989 : 1991

R: Nafessathul Misiriya. P. V.

S: P. R. Gopinathan Nair

252. Economic Aspect of Female Headed Households in Kerala.

A: Women's studies

O: To formulate a suitable operational definition of female headed household (FHH), identify factors leading to the emergence of FHH, study the economic activity pattern of women in FHH, assess the pattern of time disposition of women in FHH and to highlight the overall socio-economic status of this section.

M: Primary field survey in an urban and rural area in Trivandrum district. A stratified sampling technique adopted for selection of FHHs.

M. Phil : 1989 : 1990

R: Sheela Varghese

S: K. Ramachandran Nair

253. Structure of Industrial Wages in Kerala.

A: Industrial Economics

O: To study the trends in money, real, product and efficiency wages of industrial workers in Kerala, examine the inter - industry wage differentials and to indentify the factors responsible for inter-industry, inter-temporal wage variations.

M: Analysis is in two stages. In the first stage attempts to analyse the trends in wages in its varied perspection viz , money wages, real wages, product wages and efficiency wages. The second stage involved the identification of the

factors responsible for inter-temporal and inter-industry variations in wages. Simple and multiple regression analysis employed.

M. Phil : April 1990 : Feb. 1991

R: Anjan Sankar

S: C. Radhakrishnan Nair

254. Land Development Banks in Kerala.

A: Banking

O: To examine importance of long term loans in the agricultural development of Kerala, working of the LDB's specially their loan operations and degree of utilization of the credit by the borrowers and the extent of overdues.

M: —

M. Phil : July 1989 : June 1990

R: B. Janardhanan Pillai

S: G. Karunakaran Pillai

255. Agricultural Taxation in Kerala.

A: Public Finance

O: To examine the relevance of taxing agricultural sector in Kerala, analyse the tax structure of Kerala and bring out the performance of land based taxes in Kerala, measure the tax burden of agricultural sector and give explanations for the declining importance of land based loans.

M: Based on secondary data

M. Phil : July 1989 : June 1990

R: Johnson Thomas

S: G. Karunakaran Pillai

256. Impact of Pamba irrigation project — A case study of the command area of Chengannur taluk.

A: Agricultural Economics - Irrigation

O: To examine the impact of the pampa irrigation project on the crop pattern, cropping intensity and productivity in the command area, its negative fallout of the project particularly the extent and impact of waterlogging on agricultural production, employment and land values.

M: Survey to collect the waterlogged area in the Taluk. 10% of the population from each class of farmers selected by a sample survey and interviewed the population for each class of farmers by Sample Survey of 73 households.

M. Phil : July 1989 : Sep. 1990

R: Lalu Varghese

S: G. Karunakaran Pillai

257. Tapioca Production in Kerala.

A: Agricultural Economics

O: To analyse the trends in area, production and productivity in tapioca cultivation, analyse the structure of costs and returns in tapioca cultivation.

M: Secondary data and primary surveys combined.

M. Phil : 1989 : 1990

R: Dasayyan

S: K. Ramachandran Nair

258. Banking and Weaker Sections : A Case Study of Traditional Fishermen in Kerala.

A: Institutional Credit

O: To assess the impact of banking on weaker sections, shifts in banking policy in response to shifts in development policy, various aspects of banking problems faced by the weaker sections.

M: Primary survey

M. Phil : 1990 : 1991

R: Kumari Thulasi

S: M. Kunhaman

Indian Institute for Regional Development Studies, Kottayam

259. Water Management Problems in Kerala — A Case Study of Periyar Valley Irrigation Project.

A: Irrigation Economics

O: To scrutinise closely the existing maintenance work in storage reservoir, canal net work and water courses and field channels and also to suggest practical remedies to improve them, examine the suitability of the present method of irrigation for different crops; explore the possibility of introducing furrow/corrugated/subsurface drip method of irrigation to perennial crops and to ascertain how far canal structure and farm irrigation structures contribute to present efficiency of irrigation.

M: Survey Research

Gen : March 1987 : March 1991

R: A. M. Ravindran

S: C. J. Joseph

260. Tribal Development: Legislation and Enforcement.

A: Political Science (Social Legislation).

O: To evaluate specific Act and Welfare measures adopted for tribal development in Kerala; find out loopholes in the enforcement of legislation in tribal development, study the problem of land alienation; assess the situation of bonded labourers and suggest measures for implementation of Bonded Labour Abolition Act.

M: Survey Research

Gen : Sep. 1987 : Sep. 1996

R: S. S. Sreekumar

S: Jose George

261. Evaluation Study of Adult Education Programme in Kerala.

A: To make the target group literate and ensure that they achieve self reliance in literacy; become aware of the causes of their deprivation and participation in the process of development; acquire skills to enable them to improve their economic status and well being.

M: Survey Research

Gen : March 1989 : July 1990

R: S. S. SreeKumar

S: Molly Mathew

262. Concurrent Evaluation of Family Welfare Programme.

A: Sociology, Anthropology, Economics.

O: To evaluate the effectiveness of Family Welfare Programme and find out the inadequacies and shortfalls in the Family Welfare Scheme.

M: Survey Research

Gen : Aug. 1989 Sep. 1990

R: M. V. George

S: P. T. Joseph

263. Study on the Management of Land with Religious/Charitable Institutions in the State of Kerala.

A: Economics

O: Analysis of the legal provisions in the various land reforms of the state relating to charitable/religious institutions and examination of laws relating to land ceiling, tenancy etc., the change in the system of management of these lands after independence and the changes in the arrangement of sharing of produce between these institutions and cultivators.

M: Survey Research

Gen : Jan. 1990 : Aug. 1991

R: S. S. Sreekumar

S: Kumaresh Chakravarty

264. Evaluation Study on Special Livestock Breeding Programme.

A: Rural Development

O: To review the SLBP, whether it is implemented according to the guidelines, analyse linkages and after care of the programme, assess the impact of the programme in rural agrarian economy by giving emphasis on income generation, employment generation and attack on rural poverty.

M: Survey Research

Gen : Dec. 1990 : May 1991

R: V. K. Kurian

S: Jose Thomas

Annamalai University

265. Economics of Dryfarming in South Arcot District.

A: Agricultural Economics

O: To estimate the variability in area, yield, price and income of important crops grown in dryfarming regions of South Arcot district, compare the resource use efficiency in dryland versus irrigated land, see whether the improved dryland agricultural technology is biased towards any size class of farms.

M: Both the primary and secondary data used. Stratified random sampling method also used.

M. Phil : Nov. 1990 : Oct. 1991

R: M. Chellathurai

S: T. S. Kalyani

266. Environmental Quality in South Arcot District.

A: Environmental Economics

O: To study the general environmental problems in the South Arcot economy as a whole.

M: —

M. Phil : Nov. 1990 : Nov. 1991

R: L. Venkatachalam

S : N. Ramagopal

267. Economic Analysis of Hospital in South Arcot District.

A: Health Economics

O: To study the pattern of resource allocation in hospitals.

M: Secondary data from hospitals in South Arcot district.

M. Phil : Nov. 1990 : Nov. 1991

R: V. Ramesh

S: N. Malathi

268. The Working of Non-Bank Financial Intermediaries (N. B. F. Is) in South Arcot District.

A: Monetary Economics

O: To understand the role of N.B.F.Is in South Arcot, study the extent of financing by N.B.F.Is and understand the nature of intermediation done by NBFIs in South Aroct.

M: Primary data is from selected towns of South Arcot on a random basis from the respondents. Secondary data for analysis from the government sources of the Directorate of statistics.

M. Phil : Nov. 1990 : Nov. 1991

R: R. Balaji

S: G. Vinayakam

269. Rural - Urban Integration (A Study in South Arcot District.

A: Rural - Urban Nexus

O: —

M: —

M. Phil : Nov. 1990 : Nov. 1991

R: N. Kannappan

S: R. Elango

270. Social Forestry in South Arcot District.

A: Social Forestry

O: To Study Social Forestry in South Arcot, District, analyse the investment, employment and benefits of social forestry in South Arcot district and analyse the impact of social forestry on rural development.

M: Secondary sources like district manuals, monographs, records maintained by VAO, records of forest department etc. and time series analysis used.

M. Phil : Nov. 1990 : Oct.1991

R: Asokan R.

S: K. Dakshinamurthy

271. Transport Development in South Arcot District.

A: Transport Economics

O: To study the development of Road Transport in South Arcot District,

the efficiency and earnings between private and public sector in road transport and the distance covered by road and rail transport in South Arcot district.

M: —

M. Phil : —

R: A. Raman

S: M. Arumugam

Madurai Kamaraj University

272. Economics of Migration in Madurai City, Tamil Nadu.

A: Economics

O: To analyse the causes of migration, the socio-economic conditions of the immigrants, analyse the impact of immigration on employment and wages of immigrants, examine the rural - urban link and socio-economic impact of migration on the migrants family and recommend policy measures for tackling the main problems associated with immigration and urbanisation.

M: Based on primary data from the sample respondents. The secondary data will also support the study. The sample size may be 320, consist of slum households and other households on the basis of multi-stage random sampling. The sample size consists of migrant households and non-migrant households in the proportion of 75:25 for the purpose of making a comparison between the two categories in regard to major economic characteristics. Regression analysis, factor analysis, profit and logic models used.

Ph. D. : March 1989 : ongoing

R: A. Solucis Santhapparaj

S: R. Sankararamalingam

273. The Economics of the Export Trade in Medicinal Herbs from Chidambaranar and Tirunelveli Kattabomman District

A: —

O: To trace the evolution of the industry relating to the medicinal herbs like 'SENNA LEAVES' and 'VINCA ROSEA' available in Tirunelveli Kattabomman and Ramanathapuram Districts and Chidambaranar District with special reference to the resource, use and the problem connected thereto.

M: Census method, questionnaire relating to input and output intended for home markets would be served on individuals to elicit the data there on.

Ph. D. : Aug. 1989 : ongoing

R: C. Thangaraja

S: R. E. Benjamin

Gen : June 1990 : ongoing

R: V. Chockalingam

S: C. Arputharaj

279. Impact of Subsidies on Agricultural Development (Tamil Nadu).

A: Agricultural Ecnomics

O: To assess the impact of subsidies on farmers with respect to asset formation, income generation, employment creation etc., study the role of subsidies on input use structure, crop pattern and production pattern, on farms and the usefulness of subsidies in the adoption of modern technology for agricultural production.

M: The relative positions of the districts in the state in tems of the extent of use of subsidies on different items and one district which is most important with reference to subsidy on a particular item selected. A minimum of four important items receiving subsidy studied. In a similar way, blocks within a district will be selected. From among the list of beneficiaries within the selected block, 30 beneficiaries and 20 non-beneficiaries selected for each programme.

Gen : April 1990 : ongoing

R: S. Kesavan Nair

S: C. Arputharaj

280. Study of Emerging Problems of Agricultural Marketing with special focus on processing and Input Supplies.

A: Agricultural Economics

O: To study the existing market structure and its efficiency covering both private and regulated markets, identify the emerging problems of marketing both for new and old crops with added focus on processing, input supply, make projections of production, marketed surplus, demand, availability of market centres for all crops in general and for selected crops in particular and examine the present processing facilities and their adequacy to meet the future needs.

M: Major and emerging crops identified and one district each representing a major crop will be taken for the study.

Gen : 1991 : ongoing

R: D. Charles Valentine

S: C. Arputharaj

281. Decentralised Planning in Agricultural Rural Development — Infrastructure Development Enumeration at District level.

A: Agricultural Economics

O: To review the organisational structure and methodology adopted for decentralised planning in the district, prepare the profile of natural and human resources with focus on delineating agro-climatic regions in the district, highlight the various schemes launched in the district,

their implementation and problems and identify the constraints in agricultural and rural development and suggest measures to overcome them.

M: A district, which is representative of the state's agriculture or agriculturally backward chosen and data on natural resources, agro-economics statistics, demography, infrastructural facilities, other related figures as well as information on various schemes launched during the last 10 years studied.

Gen : 1991 : ongoing

R: C. Arputharaj

S: (Ind.)

University of Madras
Department of Econometrics

282. Demand for Telecommunication Services.

A: Public Utility

O: Estimation of Demand functions for different Telecommunication Services.

M: Econometrics of non linear pricing

Ph. D. : 1981 : ongoing

R: M. Muralikannan

S: U. Sankar

283. Electricity Supply in Kerala.

A: Public Utility/Energy

O: —

M: —

Ph. D. : 1987 : ongoing

R: Vijaya Mohanam Pillai

S: U. Sankar

284. Subcontracting in Electronics Industry — A Case Study of ECIL, Hyderabad.

A: Industrial Economics

O: To analyse the role of subcontracting in Indian Electronics Industry, the role of Government in promoting subcontracting in Indian Electronics industry, the role of subcontracting in upgrading of small scale industry and make a quantitative analysis of a very large and important subset in which both the make and buy decisions are technically feasible.

M: Primary, secondary and tools from cost accountancy and management science borrowed to make a quantitative analysis.

Ph. D. : Jan. 1988 : Jan. 1993

R: A. N. Nandini

S: K. Shanthi

285. Study of Small scale units in the backward area development.

A: Small Scale industries

O: To study the economic efficiency of small scale units in terms of size, investment and factor intensity, the contributions made by the small scale units in the backward area of Sankarankoil taluk and analyse the causes for the Industrial backwardness in the particular area.

M: The production function approach adopted to measure the contribution made by the inputs and focuses on the difference between the efficient and inefficient units.

Ph. D. : Apirl 1988 : April 1993

R: J. Gnanapushpam

S: K. Shanthi

286. Growth Pole Concept and Inter Industrial Linkages.

A: Industrial Economics

O: To highlight the interlinkage between large and small scale industries and analyse large scale industries' role as growth poles for small scale industries.

M: Inter Linkage between large scale and small scale industries analysed and focus on backward and forward linkages of SSI with large scale industries.

Ph. D. : April 1988 : April 1993

R: Vathsala

S: K.Shanthi

287. Performance Apprisal of Public Sector Undertakings with special reference to Neyveli Lignite Corporation.

A: Industrial Economics

O: To understand the economics behind the working of public sector undertakings and make performance apprisal of all in terms of profit, output and productivity ratios.

M: Application of production function approach to evaluate the productivity.

Ph. D. : June 1988 : June 1993

R: S. Sukanya

S: K. Shanthi

288. Costs of Telecommunication Services

A: Public Utility

O: Estimates of costs of individual telecommunication services.

M: Multiproduct model of Firm and econometric estimates of cost functions.

Ph. D. : 1989 : ongoing

R: S. Mahesh

S: U. Sankar

289. Uncertainty and Farm Production Decisions.

A: Agricultural Economics

O: To develop a framework for analysing farmer decisions under uncertainty, estimate stockastic production functions and find evidences for risk.

M: Economics of Uncertainty and Econometric methods.

Gen : 1988 : 1990

R: U. Sankar and G. Mythili

S: (Ind.)

290. Telecommunication Tariff.

A: Telecommunications

O: To propose a rational tariff for the Indian Telecommunication services.

M: A Multi-part tariff satisfying efficiency and equity goals and a budget constraint will be suggested.

Gen: Feb. 1990 : Sep. 1991

R: U. Sankar

S: (Ind.)

Centre for Research on New International Economic Order, Madras

291. Environmental and Public Health Problem — A Case Study of Saidapet Slum, Madras.

A: Environmental Economics

O: To study and assess the Impact of Common Diseases on Slum Area, the performance and progress of health care system in the slum and which of the households have safe drinking water and latrines.

M: Descriptive and analytical, primary and secondary data.

M. Phil : Nov. 1989 : Nov. 1990

R: Nirmala

S: K. Sivaprakasam

292. Housing the Urban Poor : Slum Upgrading and sites and services programme in selected area of Madras city.

A: Environmental Economics

O: To study urbanisation trends in India, the magnitude of the slum problems in Madras city, policies and programmes of Tamilnadu Government for slum clearance and slum upgradation.

M: Descriptive and Analytical

M. Phil : Nov. 1989 : Oct. 1990

R: H. Vennila

S: Aruna Pillai

293. Urban Services and Pollution Problems in Madras city.

A: Environmental Economics

O: To study Pollution problems in Madras city which has been largely attributed to the inability of urban services to keep pace with the increase in population, highlight the rise in urban population, constraints in handling the urban wastes which leads to the outbreak of waterborne diseases.

M: Theoretical Analysis

M. Phil : Nov. 1989 : Oct. 1990

R: S. Jayashree

S: Aruna Pillai

294. Impact of Mechanised Trawlers on the bottom ecology of the sea off Tuticorin.

A: Environmental Economics

O: To study the ecological damages caused by mechanised trawler fishing off Tuticorin Harbour, the economic gains and losses to the economy, government and fishermen on account of use of mechanised trawlers.

M: Simple illustrations of bar diagram and pie diagram used.

M. Phil : Nov. 1989 : Nov. 1990

R: V. Malaisoodum Perumal

S: Fr. M. Sebastian

295. Role of Water conservation and management in rural areas of Nattarampalli panchayat union of Tirupattur Taluk, North Arcot district.

A: Environmental Economics

O: To study the nature of the problems of water conservation and management in rural areas, emphasize the importance and role of watersheds in relation to rural eco-systems, the links between eco-system, water and bio-mass in the context of villages and suggest approaches to integrated rural ecosystem planning that involves people's participation.

M: Primary and secondary data. Field study conducted in Nattarampalli panchayat union.

M. Phil : Nov. 1989 : Nov. 1990

R: R. Annadurai

S: K. Sivaprakasam

296. The management of urban water supply in selected areas of Madras city

A: Environmental Economics

O: To critically evaluate the projected demand based philosophy, analyse pricing strategies of the water supply management, study domestic consumers attitude and industrial users attitude towards conservation and recycling.

M: The study on consumer attitudes towards the usage of water considers the minor division Chetpet. With reference to potential for recyling, the Manali industrial belt is considered.

M. Phil : April 1990 : Oct. 1990

R: V. Padmanand

S: K. Rajaratnam

297. Role of Social Forestry in Forest Management — A Case Study in village Manimangalam of Chingleput district.

A: Environmental Economics

O: To study the species and their catering to socio-economic requirements of people, assess the fuelwood & fodder need of the people of Mandmangalam, bring out a financial analysis of plantations, the assistance and return got through the programme - how the programme provides a sound ecosystem.

M: Interview with 40 samples of the water sections of the society by stratified random sampling technique. The sample has been 5% of the lower class of 850 households of the total of 1800 households.

M. Phil : April 1990 : Oct. 1990

R: Vincent Santhanam Jayakumar

S: Aruna Pillai

Madras Institute of Development Studies

298. The economic impact and social implications of the public distribution system in Tamilnadu.

A: Development Economics

O: To examine the trends in the procurement operations of the civil supplies corporation, study the interlinkages between the controlled market and the free open market in terms of purchases, distribution, price, instutional arrangements etc; and examine alternative strategies for increasing the public distribution of essential commodities in Tamilnadu.

M: Analysis of Secondary and Primary data through statistical and survey methods.

Ph. D. : Feb. 1984 : ongoing

R: C. Annadurai

S: C. T. Kurien

299. The Millet Economy of Tamilnadu

A: Agricultural Economics

O: To assess the changes in area, yield and production of major millets in the past three decades; understand the purposes of growing millets (home consumption, market, livestock, kind wage payment etc.), analyse the price and demand aspects of millets.

M: Time series secondary data and cross section primary data from field survey.

Ph. D. : Feb. 1984 : ongoing

R: M. S. Edwin Innocent

S: R. N. Poduval

300. Groundnut Economy of Tamilnadu

A: Agricultural Economics

O: To identify and analyse the nature and sources of patterns in growth and instability of groundnut area, yield and production within Tamilnadu —1960-61 to1980-81; identify pattern of growth and instability in groundnut area, yield and production across Tamilnadu, and study the factors underlying the different patterns of growth and instability.

M: Identified 8 important groundnut growing districts in Tamilnadu; study growth and instability by year moving average and percentage deviation from this trend analysed for proximate factors underlying different patterns use, a series of decomposition exercises done and for identification of actual factors influencing changes in area and yield supply response analysis used.

Ph. D. : June 1985 : ongoing

R: Asha Krishnakumar

S: A. Vaidyanathan

301. Temples, tenants and agrarian relations.

A: Rural Economics

O: To understand the evolutionary process of the existing land relations under the above religious institutions, how far the particular forms of land relations hinder/help the development of productive forces in agriculture and the effect of the particular land tenure - under which the religious institutions control the lands-on productivity and growth.

M: Historical materials mainly from Tamilnadu archives to understand the evolutionary process of inam tenure and the changes in methods/modes of land management atleast from the British period and field work in areas where the religious institutions control land, board, and other relevant individuals, samples will be based on scientific methods.

Ph. D. : June 1986 : ongoing

R: R. Vidya Sagar

S: A. Vaidyanathan

302. Bovine Economy of Tamilnadu.

A: Livestock

O: To bring out the factors that are responsible for a change in Bovine density and composition.

M: —

Ph. D. : Jan. 1987 : ongoing

R: George Mathew

S: A. Vaidyanathan

303. Urbanisation of Tamilnadu, 1901-81.

A: Urban Economics

O: To study the process of urbanisation in Tamilnadu over this century that is from 1900-1980, identify various patterns of urbanisation obtaining in the state and examine the factors underlying few of the distinct patterns.

M: —

Ph. D. : July 1987 : ongoing

R: Rukmani Ramani

S: K. Nagaraj

304. Factors determining Fertilizer consumption and its growth in Tamilnadu : 1950-89.

A: Agricultural Economics

O: To study the fluctuations and trends in fertilizer use, the diffusion and intensity of fertilizer use under irrigated and unirrigated conditions, the factors responsible for variations in fertilizer use, technological, economic and institutional factors and analyse the importance of agricultural extension and fertilizer research on educating farmers to apply appropriate fertilizer nutrients.

M: Study is based on time series secondary data. Techniques such as growth rates, stepwise multiple regression and simple correlation regression applied.

Ph. D. : Jan. 1986 : ongoing

R: T. C. Mohanam

S: A. Vaidyanathan

305. Structure and Organisation of Brick industry in Tamilnadu.

A: Industrial Economics

O: To explore the differences in the structural characteristics of Brick industry across various districts of Tamilnadu.

M: Sample Survey

Ph. D. : June 1987 : ongoing

R: E. Manoharan

S : A. Vaidyanathan

306. Conjunctive use of surface and ground water in Tamilnadu Agriculture.

A: Agricultural Economics

O: To understand above phenomenon at macro level will be conducted on important irrigation system in Tamilnadu using secondary data and at Micro level to understand the problem in detail. Case studies of irrigation system conducted covering both and also tank irrigation.

M: —

Ph. D. : March 1988 : ongoing

R: P. Anbazhagan

S: A. Vaidyanathan

307. Land market (sales) in the villages of Tamilnadu.

A: Agricultural Economics

O: To examine the nature of transactions in land (agriculture), capture the evolution of market for land in the villages and discern the trend in the pattern of land transaction in the post-sixties.

M: Two villages identified on the basis of the volume of transactions and cropping pattern over the decades. On the basis of the analysis of the secondary data from the Registration dept. as well as the revenue records the nature of the market for land (sales) will be identified. A sample questionnaire will be prepared to collect information at the primary survey and after testing the same the main survey will be conducted. The main survey results will be processed and a master-table prepared.

Ph. D. : March 1988 : Oct. 1993.

R: S. Thirumalai Velayutham

S: C. T. Kurien

308. Historical Development of Tank Irrigation in Tamilnadu.

A: Agricultural Economics

O: To study the changes in the social relations between the people and irrigation water, explore the changes in the irrigation institutions and its effectiveness performing different types of irrigation management, analyse the changes in the physical and technical characteristics of irrigation system, the impact of change in all the above mentioned aspects of water management and its effects on agriculture.

M: —

Ph. D. : Oct. 1988 : Oct. 1992

R: K. Sivasubramaniyan

S: A. Vaidyanathan

309. Industrialisation and Health : A study of Tanning and Leather industry in Tamilnadu.

A: Industrialisation and Health

O: To study development of industry by using various indicators like employment, terms of technology, process of production etc, occupation and health hazards of workers in this industry and look into the legislation enacted and enforced in this industry with regard to health and welfare of the workers.

M: —

Ph. D. : June 1989 : ongoing

R: Millie Nihila

S: Padmini Swaminathan

Indian Institute of Technology, Madras

310. The Labour Market for Scientific and Technical manpower in India.

A: Human Capital

O: —

M: —

MS : Aug. 1990 : 1992

R: Alka Arora

S: R. Malathy

311. Financial Aspects in Hospital Management.

A: Health Economics

O: —

M: —

MS : Jan. 1991 : ongoing

R: S. Sukhanya

S: V. R. Muralidharan

The Ethiraj College for Women, Madras

312. Health status of women working in Tanneries with special reference to North Arcot District.

A: Health Economics

O: To study the variable which would influence the health status of women, status since 1970s in general and survey the health status of women workers in leather institutes.

M: Secondary and Primary data, analytical approach, statistical tools like time series, correlation utilised.

Ph. D. : —

R: M. Gowhar Jhan

S: Yasoda Shanmugasundaram

EDUCATION

University of Mysore

313. Cognitive development in Visually Handicapped children (concrete operational stage).

A: Cognitive Psychology

O: To analyse the developmental trend among VH Children in acquiring selected concepts and operations to attain concrete operational stage as described by Piaget, the relationship between the cognitive developmental status of VH and their nature of handicap, type of school, sex and develop and try out an action programme for fostering cognitive development in VH children.

M: 190 VH comprised the total sample for Obj. I.A. test of cog. capabilities for VH was developed modifying Piogets tasks and used to study the developmental trend of cog. dt. of VH. An action programme was developed and tried out on a small EG emphasising the qualitative improvements in conservation of quantity through a variety of structured activities.

Ph. D. : July 1985 : July 1990

R: M. R. Mandaravalli

S: J. Padmini

314. Problem solving strategies and cognitive capabilities (of children of age group 10 - 12).

A: Cognitive Psychology (Problem - solving).

O: To identify, analyse, describe and define the strategies/tactics adopted by children in the age group 10 - 12, in solving a variety of problems classifiable into certain types, and relate them to problem features on the one hand and to certain cognitive capabilities of relevance on the other.

M: Exploratory, qualitative - descriptive and analytical in nature, with emphasis on qualitative similarities and variations of the tactics employed in solving the given set of varied problems.

Ph. D. : Sep. 1986 : Feb. 1991

R: M. P. Vijayakumari

S: P. R. Nayar

315. Language Development in primary school entrants.

A: Language Development

O: To assess and compare the spoken language of primary school entrants in their mother tongue kannada in terms of linguistic categories (syntactic) communicative functions (semantic development) & language performance index (quantive rate of speech).

M: One hundred PSEs from both urban and rural locale, with and without preschool experience, their age ranging from 5 yrs to 5 yr 10 months comprised the sample. A set of 16 stimulus situations under 7 heads used as the main tool of the study to collect the intended speech data - recorded, transcribed and analysed.

Ph. D. : Dec. 1985 : Dec. 1990

R: H. B. Usha

S: T. Padmini

316. Role perceptions, professional attitudes and job satisfaction of primary school teachers.

A: Teacher education.

O: To identify and analyse the role perceptions, professional attitudes and job satisfaction of primary school teachers, develop and standardise tools for measuring the role perception of primary school teachers, identify inter-relationships between role perceptions, professional attitudes and job satisfaction and find out how the demographic and personal variables are related to these factors.

M: Descriptive correlational study, data collected by distributing three types of tools to a selected sample of 1000 (thousand) primary teachers in Karnataka. Bio-data of teachers also collected.

Ph. D. : Sep. 1987 : Sep. 1992

R: Shanmukha

S: A. S. Raghavakumari

317. Effect of developing science process skills among preservice secondary school science teachers on their classroom behaviour.

A: Science teacher education

O: To study the effectiveness of a specially designed teacher training programme on developing science process skills - observation, inference, classification and experimentation, the effectiveness on attitude towards science and science teaching; on science achievement of taught by preservice science teachers; and in bringing about the typological differences in teaching styles.

M: Sample - student teachers with science methods of St Ann's College during 1987-88 and again in 88-89 (N = 32, N = 26); pupils of 8th and 9th std from selected schools of Mangalore.

Exptal study - pre test - post test control group design; covariates - IQ, preachievement in science of pupils at II phase, IQ & prelevel on process skills as covariates in ! place, tests to assess process skills; STOs for making classroom observatory attitude scales & IQ test.

Ph. D. : Oct. 1987 : July 1990

R: Inette Lobo

S: M. S. Lalithamma

318. Teachers' attitude, morale and job satisfaction in relation to their personality functions and school organisational climate.

A: School organisational climate

O: To study the attitude, morale, job satisfaction personality factors of secondary school teachers and also the organisational climate of the sec. schools, study the relationship between teachers' attitude, morale and job satisfaction on one hand and their personality factors and school organisational climate on the other

hand (separately as well as together and the relationship between attitudes, morale and job satisfaction of sec. school teachers and their background variables - SEs, sex, age, qualification and experience.

M: Descriptive - cum - correlational type.

Ph. D. : May 1987 : 1991

R: Malekar Sudhakar James

S: K. Yeshodhara

319. A New strategy for teaching, reading and writing in Kannada to beginners.

A: Language education

O: To develop and assess the effectiveness of the new strategy designed for teaching reading, and writing in kannada to beginners (1st std children), compare the level of achievement in reading and writing in Kannada with pre primary education and without, relate the levels of achievement in reading and writing to their auditory, visual abilities, sex, SES and age.

M: Experimental study with a control and an experimental group. The newly developed strategy with graded phases of teaching, reading and writing in Kannada would be experimented over a period of 6 to 8 months. The level of achievement in reading and writing would be assessed using specially constructed reading test and writing test and be compared with the control group.

Ph. D. : May 1988 : 1991

R: B. P. Shivaraman

S: K. Yeshodhara

320. Vocational interests and subject preference of secondary school students of different socially backward groups.

A: Guidance

O: To study the vocational interest, subject preferences of secondary school students, the relationship of vocational interest and subject preferences with certain personal variables like - sex, managements, locality.

M: Descriptive and correlation study. Sample of 1400 secondary school students in Mysore districts, Karnataka state selected.

Ph. D. : Feb. 1990 : ongoing

R: S. Vijayakumar

S: A. S. Raghavakumari

321. An Evaluative study of Janashikshana Nilayam in Mysore Dist.

A: Adult education

O: To evaluate the functioning and effectiveness of Janashikshana nilayams in Mysore Dist., study the impact of post-literacy classes on its beneficiaries and the extent of benefit of JSNs in terms of social awareness, reading interest and change of attitude towards education of beneficiaries.

M: Survey & descriptive type involving programme evaluation including better process and product aspects. Data regarding process aspect collected through questionnaire, personal visit to the centres, observation and interview with different groups of people. Product aspect pre test - post test technique to study the impact of literacy class, JSNs on the literacy level, social awareness, functionality, reading interest and attitude towards education among beneficiaries.

Ph. D. : March 91 : March 1994

R: L. Ningaraju

S: K. Yeshodhara

322. Revaluation in B.E. Degree Examination — An Analysis of Marks.

A: Evaluation

O: To collect and analyse the data regarding the revaluation marks of the undergraduate (engineering) students of the University of Mysore, the trend in respect of the percentage of students who applied for revaluation, nature and extent of change in marks and results due to revaluation in different subjects during 1982, 84, 86 and 88.

M: Descriptive trend study. The method of documentary information analysis used and marks registers/records of the undergraduate engineering examination systematically examined.

Gen : June 1989 : March 1991

R: B. N. Sujatha

S: (Ind.)

323. Some role perceptions and social attitudes of women in relation to their adjustments.

A: Women Education

O: To develop and standardise a tool to measure the role perceptions of women, the relationships of adjustments with role perceptions and social attitudes, the differences between the sub-groups formed on the basis of education, occupation, employment etc, in respect of 7RPs, SAs and 5 adjustments and the predictors of adjustments of women (among the variables included in this study).

M: This is a descriptive correlational study. Three types of data collected by distributing types of tools to a selected sample of 1000 workers belonging to different categories like professionals, semi-professionals etc. and information about certain demographic/personal variables. Statistical techniques test, correlation, and linear regression analysis.

Gen : Sep. 1989 : June 1991

R: A. S. Raghavakumari

S: (Ind.)

Madurai Kamaraj University

324. Utilisation of educational technology for teaching in Higher Education.

A: Educational Technology

O: To assess the educational technological requirement of the higher educational institutions, whether teachers are making use of them, the difficulties experienced by the teachers regarding the use of modern technology in their teaching and take stock of the availability of the hardware & software material in higher educational institutions.

M: Survey method, educational technology questionnaire, rating scale and checklist constructed and teachers from arts and science colleges of Tamilnadu selected.

Ph. D. : Sep. 1989 : ongoing

R: K. Nachimuthu

S: G. Subramania Pillai

325. A comparative study of the B.Sc. & M.Sc. Physics curricula of affiliated and autonomous colleges.

A: Education

O: To assess and compare the B.Sc and M.Sc. Physics curricula followed in affiliated and autonomous colleges in terms of set of criteria.

M: Content Analysis, documents relating to the B.Sc. & M.Sc. physics curricula of affiliated autonomous colleges, subjected to analysis in terms of a set of criteria developed by Mesmin Jayanthi (1988). Quantitative and qualitative ratings done.

M. Phil : —

R: R. Amutha Rani

S: K. Krishnan

326. Economic parameters and interests of vocational stream students.

A: —

O: To identify the economic parameters of vocation stream students, their interests and examine their relationship.

M: Sivagangai educational district with eleven schools offering vocational courses to 250 students covered. Primary and secondary data used.

M. Phil : —

R: P. Pattinathar

S: P. N. Muthiah

327. College student perception of history.

A: Education

O: To find out the perception difference in college students, perception of history, compare the perception of history and language students of History & the perception of History and Science students of History.

M: Survey method, variables used in the study are sex, level of education such as UG and PG, major subjects like History, Language, Sciences, Commerce etc. their colleges, parent's income, occupation, students place of study, etc.

M. Phil : —

R: Rajasekaran

S: S. Sinnathambi

328. An Analysis of Educational Video productions made in India.

A: Education

O: To find out the distribution of educational videos produced by different centres, years, under different branches of knowledge, different subjects and to make suitable suggestions for improvement.

M: Status study to understand the present position of the educational video production (made) in India. Data is the catalogue on countrywide classroom prepared and published by the UGC, New Delhi, 1988. 1007 Education Video Programmes taken into consideration.

Gen :—

R: G. Subramonia Pillai

S: (Ind.)

GEOGRAPHY

University of Madras

329. Energy, Environment and Rural Regional Development : A Case study of North Arcot.

A: Geography

O: To identify the changing energy demand and consumption pattern, examine the rural regional development in the district and assess the environmental implications with regard to energy in the development process.

M: Primary data for energy demand and consumption pattern and secondary information for rural regional development and environmental implications used.

Ph. D. : Feb. : 1986 : ongoing

R: R. Bhavani

S: S. Subbiah

330. Growth of small towns in Tamilnadu.

A: —

O: Trace the growth through successive decades, examine the temporal trend, regional variations, identify factors for the growth pattern, analyse the components of growth, examine the policy in development of small towns and suggestions for development of small towns.

M: —

Ph. D. : April 1989 : ongoing

R: S. Malathi

S: P. S. Tiwari

331. A study on Industrial Land use of Madras Metropolitan Area.

A: Industrial Geography

O: To find reasons of the existing industries and their utilisation of land in respect with the growth of economy, analyse the impact of rapid industrialization and resultant land uses and changes, correlate the relationship of the industrial land uses and the ever changing policies of the popularly elected government for the fifty years period i.e., between 1940-1990 & the potential hazard of the industrial waste, discharges into the land and sea which in turn

affects human health and the flora and fauna of the MMA.

M: —

Ph. D. : Feb. 1999 : ongoing

R: B. Shanthi

S: N. Sivagnanam

332. Voting behaviour of Tamilnadu Electorates — A spatiotemporal analysis.

A: Population

O: To analyse the pattern of variation in voting for National parties in the Lok Sabha and regional parties in Assembly elections, study the alliance of parties and swing patterns of voting and the stability aspects of swing of the voting behaviour pertaining to the party.

M: The party perspectives and the relation of successive wins analysed through the 'relational matrix' which shows the % of votes polled by the winning candidates of the opposite party of 1980-84 and 1984-89. Voters concentration and augmentation is analysed through the choropleth maps with the help of concentration index.

M. Phil : Oct. 1989 : Nov. 1990

R: B. Vijayakumari

S: N. Sivagnanam

333. Slope development and management in N. Tamilnadu.

A: Geomorphology

O: To understand the development and form of slopes, the processes that have been responsible for different natural land forms and assess the stability of different types of slopes under given conditions.

M: Consultation of topo sheets, interpretation of photographs and interpretation of satellite by digital processing - field data generation.

Ph. D. : Feb. 1991 : ongoing

R: B. Nayantara

S: S. Subbiah

334. Employment wage differential in Agriculture.

A: Rural

O: To identify the wage differential in Agriculture, the trend of wages of women field labourers and the wage structure from 1976 to 1981.

M: Primary sources

M. Phil : Oct. 1990 : Nov. 1991

R: S. Kamala

S: T. Vasanthakumaran

335. Spatial and Socio Economic problems of working women.

A: Urban

O: To study problems in commuting and socio-economic problems of working women.

M: Primary data

M. Phil : Oct. 1990 : Nov. 1991

R: K. S. Banu

S: Vasantha Viswanathan

336. Recent Development of Marine Fisheries in Tamilnadu.

A: Geography

O: To understand the main issues and inter-relationship between variables in the entire management system of the marine fishing industry and provide guidelines for the planning, implementation of the development of this sector.

M: —

M. Phil : Oct. 1991 : 1992

R: S. Rajeswari

S: P. S. Tiwari

HISTORY

Mangalore University

337. The Jamma system of coorg : Its socio-economic dimensions (1800-1980).

A: Modern period

O: To study the origin and nature of the role of the Jamma slaves and its impact on the society and economy of the Coorg, the relationship between Jamma tenure and joint family system, partition of the ancestral landed property, jamma constituency (Coorg Legislative Council), impact of the introduction of the coffee plantations on the Jamma system by creating the new capitalist trend in Coorg particularly during the second half of the 19th century.

M: The sources for the study are available in Record office Coorg, the state Archives of Karnataka, Tamilnadu, Bombay and Delhi. They include the Sanads, official Memoranda, Revenue Manuals and Proceedings, Official Correspondence, private papers, Court Judgements and Record of rights.

Ph. D. : July 1988 : July 1992

R: T. P. Vijaya

S: B. Surendra Rao

338. The political structure of the Deccan under the Rashtrakutas (700-1000 AD).

A: Early Medieval India

O: To examine the position and authority of the monarch in the Deccan between the 8th & 11th centuries, examine the socio-economic structure which determined the power of thinking and the role of the local chiefs.

M: The inscriptions and literary works of the period used to re-interpret the available data in the light of studies made by Prof. R.S. Sharma i.e., the extent of the corrosion of the state's power by the rise of intermediaries between the king and the peasant, the socio-economic structure determined the political structure of this period.

Ph. D. : Feb. 1988 : Feb. 1992

R: V. S. Elizabeth

S: Kesavan Veluthat

339. The Minor powers under the Hoysalas

A: Medieval Karnataka History

O: To examine the origin, growth and position of the Minor powers under

the Hoysalas between AD 970 to AD 1342, to reinterpret the available original inscriptional evidence and not merely uncover any new data, trace the origin and growth of minor powers, relations with the Hoysalas, pattern of socio-economic development & cultural expressions.

M: Based on epigraphic evidences supplemented by the litarary accounts.

Ph. D. : March 1990 : March 1994

R: B. Udaya

S: H. V. Srinivasa Murthy

University of Kerala

340. Socio-economic implications of the Punnapra-Vayalar.

A: To unravel the social and economic factors that propelled this asprising role of communal factor in determining the course to a very great extent, examine how far it was politically motivated.

M: Archival sources, police reports, letters and memorandum of individuals and certain organisations who were enemical towards the uprising, pamphlets tracts etc, published by the communist party and the various trade unions under it, interviews and field study.

Gen : 1989 : 1990

R: K. K. Kusuman

S: (Ind.)

341. Selections from the history of modern South India.

A: History of Modern South India

O: To highlight the establishment of the British hegemony in the native states of Tanjore, Mysore, the Carnatic, Travancore, Cochin and trace the socio-economic developments.

M: —

Gen : 1989 : 1991

R: B. Sobhanan

S: (Ind.)

University of Madras

342. History of Marital arts in "Art of Varmam" India.

A: History of Martial Arts in India

O: To bring out the historical development of Varmam and define the martial art with physiology.

M: —

Ph. D. : Jan. 1989 : Jan. 1992

R: M. Manickavasagam

S: V. Balambal

343. Malayalam cinema - society and politics of Kerala.

A: Media History

O: To assess the nature of relationship between cinema and society and politics, examine the ideas, ideologies and organisation connected with cinema and their impact, indicate possibilities of a meaningful relationship between cinema, Politics and Society.

M: Sociological and ideological parameters, examination of textual and contextual materials, chronological assessment of cinema and society and politics, relationship of cinema to society and politics.

Ph. D. : Jan. 1988 : Oct. 1990

R: Vasanthi Sankara Narayanan

S: P. Jagadeesan

344. Educational Development of the Depressed classes under the British rule.

A: Modern History

O: To study modern education system, how depressed class people were given education and what are the social changes which took place around the depressed classes.

M: Historical method

Ph. D. : April 1990 : April 1993

R: V. Ranganivas

S: P. Jagadeesan

345. Impact of performing Arts of Tamilnadu (classical music + B. Natyam) in USA (1970-1990).

A: Art - History

O: To study the importance of culture and art at international level and create awareness of Development of Art in USA.

M: Historical method, primary and secondary sources, personal interviews, journals and newspapers

Ph. D. : Dec. : 1990 Dec. 1992

R: Deepa Menon

S: P. Jagadeesan

346. Harijan welfare schemes in Tamilnadu (1947-1967).

A: Modern Tamilnadu

O: To study impact of the Education on Scheduled Caste & Scheduled Tribe, Grants for SC/ST, Social Changes among SC/ST.

M: Historical Method

Ph. D. : July 1989 : July 1992

R: A. Ranjith

S: P. Jagadeesan

347. Ambattur Industrial Estate — A study.

A: Development of Industry in Tamilnadu.

O: To make a study on a small scale industrial development, bring out the nature and the function of the Industrial Estate and assess the contribution of small scale industries to the economic development of Tamilnadu.

M: Socio-economic approach

M. Phil : Oct. 1990 : Sep. 1991

R: M. Rajalakshmi

S: P. Jagadeesan

348. The Salvation Army — A Study.

A: Christian Missionary activities.

O: To make a historical study on salvation army, objectives and

functioning and contribution to society.

M: Historical Methodology

M. Phil : Oct. 1990 : Sep. 1991

R: Pilli Rajamani

S: P. Jagadeesan

349. Women writers on women.

A: Cultural History of Tamilnadu

O: To bring to limelight the role played by the women writers in the social reconstruction, analyse their approaches to the problems of women and critical analysis of their contribution to the society.

M: Literacy sources - personal interviews and socio-literacy criticisms.

M. Phil : Oct. 1990 : Sep. 1991

R: K. Vijaya

S: P. Jagadeesan

350. Madras Doordarshan — A Study.

A: Public Media

O: To make historical study on Madras Doordarshan, objectives and functioning and contribution to society.

M: Historical Methodology

M. Phil : Oct. 1990 : Sep. 1991

R: K. Sathya Bhama

S: P. Jagadeesan

351. Women in Medical Profession in Madras City.

A: Women studies

O: Finding sources available to know women in medical profession, their professional and social problems & suggestions for improvement.

M: Historical Methodology

M. Phil : Oct. 1990 : Sep. 1991

R: S. Balasaraswathi

S: V. Balambal

352. Madras Music Academy — A study.

A: Cultural History

O: To find the areas of cultural activities of Madras - Music and Dance, Music Academy - its growth and contribution to music and suggestions for improvements.

M: Historical Methodology

M. Phil : Oct. 1990 : Sep. 1991

R: N. Lakshmi

S: V. Balambal

353. Art Industry in Tamilnadu.

A: Art Industry

O: To bring to limelight the significance of arts in Tamilnadu, collecting the primary sources and write an objective history of art industry & problems and prospects of Art industry in Tamilnadu.

M: Historical Methodology

M. Phil : Oct. 1990 : Sep. 1991

R: S. Saraswathi

S: V. Balambal

354. History of Fire Services in Madras.

A: Public Service

O: To bring out the significance of fire service, contribution to the people of Madras & suggestions for improvement.

M: Historical

M.Phil : Oct. 1990 : Sep. 1991

R: B. Ponmudi

S: V. Balambal

355. Development of Irrigation and Agriculture from 1900 to 1980 in Pudukottai District.

A: Economic History of Tamilnadu

O: To study irrigation and Agricultural Development before 1900, from 1900 to 1950 and the agricultural prosperity of Pudukottai District.

M: Historical

M. Phil : Oct. 1990 : Sep. 1991

R: C. Jagadambal

S: G. Venkataraman

LAW

Karnatak University

356. Industrial Relations in Pondicherry — Problems and Perspectives.

A: Industrial Law

O: To study the industrial potentiality available in Pondicherry which attracted the French to set up their 'Settlement' and the industrial relation system developed during the French regime at Pondicherry with a view to project the "Pondicherry experience' as a model to suitably change our system existing at present to achieve better industrial relation vis-a-vis economic prosperity.

M: Doctrinal as well as empirical to a limited extent by adopting a structured interview method.

Ph. D. : March 1979 : Nov. 1990

R: S. G. Bhat

S: G. V. Ajjappa

357. Strikes in Industrial Conflict — A critical and comparative study.

A: Labour Law

O: To make a historical study of strike occurrence, compare the conceptual evaluation of 'strike' in England and in India; determine into which theoretical setting the present day legal conception of strike fits in and examine the legal aspects of strikes in industrial conflict.

M: Analysis of secondary data on strikes occurrence and judicial decisions on 'strikes'.

Ph. D. : August 1978 : ongoing

R: V. B. Countinho

S: G. V. Ajjappa

Political Science and Public Administration

358. The Language Policy of Karnataka — An Enquiry into the Policy package and its determinants.

A: Language

O: To analyse the varied aspects of the language problem with reference to India in general and Karnataka in particular, throw much light on the language problem, language policy package, language politics, policy determinants and problems of language administration in Karnataka and understand Karnataka Politics in particular and Indian Politics at the State level in a better way.

M: Historical, Analytical and Sociological Methods of (Interview and Observation.

Ph. D. : Aug. 1988 : ongoing.

R: Midatala Rani

S: M. Umapathy

PSYCHOLOGY

University of Calicut

359. A personality study of patients with certain psychosomatic illness.

A: Psychosomatic disorders

O: To study if specific personality structure can increase the susceptibility of psychosomatic disorders, each psychosomatic gp have a unique pattern of personality structure and externally oriented individuals on loc are less susceptible to psychosomatic illness.

M: Sample psychosomatic groups of asthma patients, headaches, esssential hypertension, pepticulcers, eczema and Malangalin, std version of 16 personality factor On of cattell (1965), Loc, On, PGI general well being scale (SK Verm 1979) used.

Ph. D. : June 1988 : July 1992

R: —

S: Anita Ravindran

360. A study into the job related stress among nurses in relation to Loc, organisational climate and life change events.

A: Organisational Behaviour

O: To study whether nurses with internal Loc experience less stress, occupational stress will be related with hospital climate, certain demographic variables such as age, experience, salary etc.

M: Sample of 500 nurses & instruments such as Maslach Burnout Inventory, Loc inventory and organizational climate Our used.

Ph. D. : —

R: Joseph Kuruvilla

S: —

361. Personality and stress factors among cancer patients.

A: Stress research

O: —

M: To study the influence of personality and stress factors among cancer patients (Factorial design is used).

Ph. D. : Oct. 1981 : Oct. 1993

R: Verghese Paul

S: P. N. O. Tharakan

SOCIAL WORK

Madras School of Social Work

362. Students' research - review and prospects.

A: Social Work Research

O: To find out appropriateness and usefulness of topics studied by students, methodologies used and teachers' views as well as the students' on the above questions.

M: Content analysis of project reports and interviews with students and research guides.

M. Phil : Sep. 1989 : Dec. 1991

R: P. Nalini

S: P. K. Visvesvaran

SOCIOLOGY

University of Kerala

363. Social background of Trade unions.

A: Industrial relations

O: To study the delineated social and political influences of Trade Union movement in the coir industry in Kerala.

M: Interview and survey

Ph. D. : 1979 : 1990

R: N. Raveendran

S: G. Ramachandran

364. Health status of fisherwomen in Kerala.

A: Women Studies

O: To analyse the social, cultural norms, value systems as determinants of health status, examine the attitude towards attitudes and practices on health care system, study the implications of population policies and family planning programmes on health status of women.

M: Primary source data from the fishing communities of Trivandrum Dist, questionnaire, participant observation and informal discussion.

Ph. D. : 1990 : 1995

R: B. Jayashree

S: Manu Bhaskar

365. Panchayat Raj & Rural Development

A: Rural Development

O: To analyse the historical evolution of panchayats in Kerala & the socio-economic and political background of panchayat members.

M: Data from 100 panchayat members from Trivandrum Dist.

Gen : Feb 1991 : 1991

R: Abraham Vijayan

S: Manu Bhaskar

Madurai Kamaraj University

366. Intellectual community and its reorientation.

A: Modernization and Development

O: To study the change of values and practices, and introduction of innovations in the Indian organisations after spending years in western countries.

M: Design - exploratory

Sample - Medical doctors and University teachers, Size of the sample - 200, Area - Madras, Madurai and Coimbatore. Technique - interview Tool - structured interview schedule.

Gen : 1988 : 1990

R: B. Nalini

S: R. Venkataratnam.

367. Is Ham Radio An Elite Hobby? An Indian Study.

A: Sociology of Leisure

O: To have comprehensive socio - economic background of Amateur Radio operators. How many of them are active / how many are not? Why? Is the group elitist or otherwise and What are their motivations to take up this hobby and does that show any pattern?

M: Out of 3000 licence holders listed in an alphabetical call book, 1000 were selected using random numbers, reply paid 32 item questions were mailed and respondents were asked to return them within a specific date and base language used.

Gen : Oct. 1989 : May 1990

R: R. Venkataratnam

S: (Ind.)

368. Old age in rural society : Profile and problems (UGC project).

A: Social Gerontology

O: To identify the factors that determine the conception of old age, the familial problems faced by ageing and the response of the younger generation to them and describe the way in which the old live under the circumstances.

M: Interview the respondents with the general framework indicated by a structured interview schedule and personal observations.

Gen : Dec. 1990 : Dec. 1991

R: I. Singaram

S: (Ind.)

Madras Institute of Development Studies

369. The Educational status of women in India, with special reference to Tamil Nadu.

A: Women and Education

O: To look into the history of educational status of women, especially with reference to the differential caste - class participation.

M: Socio - History research

Ph. D. : Feb. 1990 : ongoing

R: R. Akila

S: P. Radhakrishnan.

PART II

Specialisations

Area of Specialisation		Centre
	Agriculture	
Agricultural Cooperation	—	Gulbarga University Annamalai University Tamil Nadu Agricultural University University of Madras
Agricultural Economics	—	Osmania University Sri Venkateswara University University of Hyderabad Administrative Staff College, Hyderabad Madurai Kamaraj University, Madurai Bharathidasan University, Tamilnadu Madras Institute of Development Studies
Agricultural Finance	—	University of Agri. Sciences, Bangalore
Agricultural Marketing	—	Administrative Staff College, Hyderabad University of Agricultural Sciences, Bangalore Tamil Nadu Agricultural University
Agricultural Price Analysis	—	Bharathidasan University Tamilnadu Agricultural University
Environmental Economics	—	Administrative Staff College, Hyderabad Annamalai University Madurai Kamaraj University Tamil Nadu Agricultural University Madras Institute of Development Studies
Farm Management	—	University of Agricultural Sciences, Bangalore Tamil Nadu Agricultural Univresity
Forest Economics	—	Tamil Nadu Agricultural University
International Commodity Trade	—	Tamil Nadu Agricultural University
Irrigation Management	—	Tamil Nadu Agricultural University
Production Economics	—	Madurai Kamaraj University Tamil Nadu Agricultural University
Resource Economics	—	Tamil Nadu Agricultural University

Area of Specialisation		Centre
Rural Development	—	Administrative Staff College, Hyderabad Annamalai University Madurai Kamaraj University Tamil Nadu Agricultural University Madras School of Social Work, Madras Madras Institute of Development Studies
Anthropology		
Cultural Anthropology	—	Karnatak University University of Mysore
General Anthropology	—	University of Mysore
Social Anthropology	—	Andhra University
Medical Anthropology	—	University of Mysore
Population Anthropology	—	University of Mysore S.V. Universtiy
Physical Anthropology	—	Andhra University Karnatak University
Commerce & Business Administration		
Entrepreneurship	—	Madurai Kamaraj University
Finance	—	Madurai Kamaraj University Stella Maris College
Management Philosophy	—	Madurai Kamaraj University
Production Management	—	Madurai Kamaraj University
Entrepreneurship	—	Madurai Kamaraj University
Marketing Entrepreneurship	—	Madurai Kamaraj University
Personnel Management	—	Madurai Kamaraj University
Production Management	—	Madurai Kamaraj University
Organisational Behaviour	—	Madurai Kamaraj University
Demography		
Economic Demography	—	University of Kerala
Fertility and Family Planning	—	Sri Venkateswara University Madras Institute of Development Studies

Area of Specialisation		Centre
Infant Mortality	—	Sri Venkateswara University Madras Institute of Development Studies
Population Studies	—	Sri Venkateswara University
Social Demography	—	Sri Venkateswara University

Economics

Banking	—	Sri Venkateswara University University of Mysore
Development Economics	—	Osmania University Sri Venkateswara University University of Hyderabad Annamalai University University of Agricultural Science Bangalore Madras Institute of Development Studies CRNIeO
Econometrics	—	Osmania University Sri Krishnadevaraya University University of Hyderabad University of Mysore Madurai Kamaraj University University of Madras
Economic Theory	—	Madurai Kamaraj University Madras Institute of Development Studies
Energy Economics	—	Administrative Staff College, Hyderabad
Health Economics	—	Sri Krishnadevaraya University University of Mysore University of Kerala Annamalai University Madras University
International Economics	—	Osmania University Sri Venkateswara University University of Kerala CRNIeO
Labour Economics	—	Univerisity of Mysore University of Kerala Madurai Kamaraj University Madras Institute of Development Studies Stella Maris College

Area of Specialisation		Centre
Macro Economic Analysis	—	Osmania University
Monetary Economics	—	University of Kerala
Operations Management	—	Administrative Staff College, Hyderabad
Public Finance	—	Sri Venkateswara University Sri Krishnadevaraya University University of Kerala Annamalai University Stella Maris College
Political Economy	—	Osmania University Madras Institute of Development Studies
Rural Economics	—	University of Madras Sri Krishnadevaraya University Sri Venkateswara University
Urban Economics	—	Sri Krishnadevaraya University Gulbarga University Annamalai University Madurai Kamaraj University Madras Institute of Development Studies
Welfare Economics	—	University of Mysore Madras Institute of Development Studies
Women Studies	—	Annamalai University University of Madras Madras Institute of Development Studies

Education

Adult & Continuing Education	—	University of Madras
Curriculum Development	—	Madurai Kamaraj University
Economics of Education	—	University of Madras University of Kerala
Education Administration	—	University of Mysore
Educational Evaluation	—	Madurai Kamaraj University University of Madras
Educational Management	—	University of Madras
Educational Psychology	—	Madurai Kamaraj University University of Mysore
Educational Statistics	—	University of Mysore

Area of Specialisation		Centre
Educational Technology	—	University of Mysore University of Madras Madurai Kamaraj University
Higher Education	—	University of Madras
Science Education	—	University of Mysore
Teacher Education	—	University of Mysore University of Madras
	Geography	
Agricultural Geography	—	University of Madras
Cartography	—	University of Madras
Coastal Geography	—	University of Madras
Resource Analysis	—	University of Madras
Regional Planning	—	University of Madras
Urban Geography	—	University of Madras
	History	
Ancient Indian History	—	University of Hyderabad Mangalore University
Epigraphy	—	University of Hyderabad
South Indian History	—	Mangalore University University of Kerala University of Madras
Modern History	—	University of Madras
	Law	
Jurisprudence	—	Karnatak University
Labour Law	—	Karnatak University
	Political Science and Public Administration	
Indian Government and Politics	—	Sri Venkateswara University University of Bangalore University of Mysore

Area of Specialisation		Centre
Industrial Economics	—	Osmania University
International Politics	—	Sri Venkateswara University
Political Economy	—	Osmania University
Public Administration	—	University of Mysore
	Philosophy	
Analytical Philosophy	—	Karnatak University
Indian Philosophy	—	Karnatak University
	Psychology	
Clinical Psychology	—	Bangalore University University of Calicut
Counselling and Guidance	—	Bangalore University
Industrial Psychology	—	Bangalore University University of Calicut
Organisational Psychology	—	University of Calicut
	Social work	
Family and Child Welfare	—	Madras School of Social work
Tribal Development	—	Madras School of Social Work
	Sociology	
Industrial Sociology	—	University of Kerala Madurai Kamaraj University
Medical Sociology	—	University of Kerala
Minority Groups	—	Sri Venkateswara University University of Kerala
Political Sociology	—	University of Kerala
Rural Sociology	—	Madurai Kamaraj University
Scheduled Castes	—	Sri Venkateswara University Madras Institute of Development Studies

Area of Specialisation		Centre
Social Change	—	University of Kerala Madurai Kamaraj University
Social Conflict	—	University of Kerala
Social Demography	—	Sri Venkateswara University
Sociology of Education	—	University of Kerala Madras Institute of Development Studies
Sociology of Kinship	—	Madurai Kamaraj University
Sociology of Politics	—	Madurai Kamaraj University
Sociology of Social Stratification	—	Madurai Kamaraj University
Sociology of Mass Communication	—	University of Kerala Madurai Kamaraj University
Sociology of Tribal Studies	—	University of Kerala.

APPENDIX

Addresses of the Universities, Research Institutions and Colleges which responded to the Twentyfirst Census

1. Andhra University
Viskapatnam, Waltair - 530 003
Ahdhra Pradesh.

2. Osmania University
Hyderabad - 500 007
Andhra Pradesh.

3. Sri Venkateswara University
Tirupathi - 517 502.

4. Administrative Staff College of India
Bella Vista
Hyderabad - 500 134.

5. Director
Institute of Development and
Planning Studies
Muvvalavanipalem
Visakapatnam - 530 017
Andhra Pradesh.

6. Gulbarga University
Janana Ganga
Gulbarga - 585 105
Karnataka.

7. Karnatak University
Pavate Nager, Karnataka
Dharwad - 580 003.

8. Mangalore University
Mangalogangotri - 574 152
Mangalore DK
Karanataka.

9. University of Mysore
Manasa Gangotri
Mysore - 570 006.

10. Cochin University of Science
and Technology
University of Cochin
Cochin - 682 022.

11. University of Calicut
Amattukara P.O., Trichur - 680 618
Kerala.

12. University of Kerala
Kariavattom P.O.
Trivandrum - 695 581, Kerala.

13. Inidan Instutute for Regional
Development Studies
Pallarikunnu, Kottayam - 686 927
Kerala.

14. Annamalai University
Annamalai Nagar - 608 002
Tamilnadu.

15. Madurai Kamaraj Univesity
Palkalai Nagar
Madurai - 625 021.

16. Tamil Nadu G.D. Naidu
Agricultural University
Dept. of Agricultural Economics
Coimbatore - 641 003.

17. University of Madras
Chepauk, Madras - 600 005.

18. The Director
Madras Institute of Development
Studies
79, Second Main Road, Ganghinagar
Adyar, Madras - 600 020.

19. The Director
CRNIeO
1, First Cross Street, Wallace Garden
Madras - 600 006.

20. The Madras School of Social Work
32, Casa Major Road
Egmore, Madras - 600 008.

21. Prof. & Head
Dept. of Humanities and Social Sciences
IIT, Madras - 600 036.

22. Ethiraj College for Women
Egmore
Madras - 600 105.

Publications of the Institute consist of the following categories

1. **Publications brought out by Messrs Sangam* Publishers :** These consist of a series of monographs mainly relating to Rural Development of Tamilnadu brought out between 1972 & 1980. Detailed list including prices available on request from the Programme Coordinator of MIDS. Orders may be placed with Sangam Publishers, 11, Sunkurama Chetty Street, Madras - 600 001 for these.

2. **Cyclostyled Publications :** These consist of Working Papers, Digest Series, Data Series, Popular Series, Interns Reports and Offprint Series, brought out since 1978. Detailed list available on request from the Programme Coordinator of MIDS.

3. **Occasional Publications of the Institute Include :**

a) *A Manual of Sources of Data on Tamil Nadu Economy* (1979) published by MIDS pp. 92, priced at Rs. 10/- per copy and Rs. 6.50/- for bonafide research scholars.

b) *Area Studies Bibilography Tamil Nadu* (1984) published by MIDS, pp. 226 Rs. 30/- for paper cover & Rs. 40/- bound volume.

c) Social Science Research in South Indian Universities—Listing and Review of Ph.D. Dissertations (1989) Published by MIDS and ICSSR, SRC, pp. 260, Rs. 20/-

a), b) and c) obtainable from the Programme Coordinator of MIDS.

4. **Special Publications***

a) *Poverty — An Interdisciplinary Approach* edited by B. Sarveswara Rao & V. N. Deshpande (1982) & published for MIDS by M/s Somaiya Publishers Pvt. Ltd, Bombay, pp. 296, Rs. 125/-

b) *Guide to Research in Economics*, edited by C.T. Kurien (second edition) (1985) & Published for MIDS by M/s. Rainbow Publishers, Coimbatore, pp. 390

c) *Some thoughts on the Seventh Plan* by Dr. Malcolm S. Adiseshiah (1985) & published for MIDS by M/s. Dialogue Publishers, New Delhi, pp. 136, Rs. 70/-

d) *Shaping National Events* by Dr. Malcolm S. Adiseshiah (1985) & published for MIDS by M/s Dialogue Publishers, New Delhi, pp. 335, Rs. 180/-

e) *Tamil Nadu Economy: Performance and Issues* by MIDS (1988) & Published for MIDS by Oxford and IBH Publishing Co. Pvt. Ltd. Delhi, Rs. 60/-

*These publications may be ordered directly from the respective publishers.

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MADRAS INSTITUTE
OF
DEVELOPMENT STUDIES
(MIDS)

The Institute was founded by Dr. Malcolm S. Adiseshiah in 1971 and was reconstituted in 1977 as a National Research Institute within the framework of the Indian Council of Social Science Research, New Delhi.

The aim of the Institute is to contribute to the economic and social development in Tamilnadu and India.

The activities of the Institute are:

—Research leading to Ph.D. Degree

—Studies and action-oriented research in micro-development problems

—Documentation and library service in development problems

—Exchange and dialogue at the State, National and International levels on development issues

—Publication of papers and results of the Institute.

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